

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Defense Health Agency **Date:** March 2023

Appropriation/Budget Activity **R-1 Program Element (Number/Name)**
 0130: *Defense Health Program I BA 2: RDT&E* PE 0603115DHA I *Medical Technology Development*

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	5,308.054	2,020.169	2,307.376	326.667	0.000	326.667	328.445	333.013	338.431	345.201	Continuing	Continuing
300A: <i>CSI - Congressional Special Interests</i>	4,594.732	1,787.181	1,986.880	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	-
238C: <i>Air & Space Austere Environment Patient Care and Transport (AF)</i>	27.575	12.212	12.866	13.122	0.000	13.122	13.386	13.654	13.928	14.207	Continuing	Continuing
284B: <i>Air & Space Physiology, Medicine and Human Performance (AF)</i>	23.351	10.716	11.471	11.700	0.000	11.700	11.933	12.173	12.416	12.663	Continuing	Continuing
285A: <i>Operational Medicine Research & Development (Budgeted) (AF)</i>	9.828	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
307B: <i>Air & Space Force Health Protection (AF)</i>	26.893	11.044	11.630	11.862	0.000	11.862	12.099	12.341	12.587	12.840	Continuing	Continuing
308B: <i>Expeditionary Medicine Research & Development (Budgeted) (AF)</i>	12.241	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
309A: <i>Regenerative Medicine (USUHS)</i>	28.665	10.271	10.833	11.051	0.000	11.051	11.271	11.496	11.724	11.958	Continuing	Continuing
373: <i>GDF - Medical Technology Development</i>	207.753	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
373A: <i>GDF - MTD (Combat Casualty Care)</i>	11.168	15.357	24.519	26.943	0.000	26.943	27.950	28.871	29.810	30.406	Continuing	Continuing
373B: <i>GDF - MTD (Military Operational Medicine)</i>	23.255	23.588	34.150	22.426	0.000	22.426	23.152	23.815	24.492	25.182	Continuing	Continuing
373C: <i>GDF - MTD (Medical Simulation & Training/Health Informatics)</i>	12.613	12.729	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
373D: <i>GDF - MTD (Clinical and Rehabilitation Medicine)</i>	13.040	14.619	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

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0130: Defense Health Program I BA 2: RDT&E					PE 0603115DHA I Medical Technology Development							
373E: GDF - MTD (Military Infectious Disease)	6.409	6.470	12.886	13.817	0.000	13.817	13.747	13.659	13.570	13.841	Continuing	Continuing
373F: GDF - MTD (Radiological Health Effects)	0.501	0.523	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
373G: GDF - MTD (Military Medical Photonics)	10.000	9.953	10.404	10.612	0.000	10.612	10.824	11.040	11.261	11.486	Continuing	Continuing
373H: GDF - MTD (Medical Advanced Technology)	0.000	0.000	68.016	68.823	0.000	68.823	65.066	64.322	64.330	65.617	Continuing	Continuing
378B: CoE-Breast Cancer Center of Excellence (USUHS))	31.076	10.534	11.116	11.339	0.000	11.339	11.566	11.797	12.033	12.274	Continuing	Continuing
379B: CoE-Gynecological Cancer Center of Excellence (USUHS)	27.167	9.201	9.719	9.913	0.000	9.913	10.111	10.313	10.519	10.728	Continuing	Continuing
381: CoE - Integrative Cardiac Health Care (USUHS)	7.609	1.684	1.809	1.875	0.000	1.875	1.943	1.982	2.022	2.062	Continuing	Continuing
382B: CoE-Pain Center of Excellence (USUHS)	8.523	1.965	2.084	2.156	0.000	2.156	2.230	2.277	2.327	2.374	Continuing	Continuing
383A: CoE-Prostate Cancer Center of Excellence (USUHS)	24.806	8.417	8.870	9.047	0.000	9.047	9.228	9.413	9.600	9.792	Continuing	Continuing
478: Applied Proteogenomics Organizational Learning and Outcomes (APOLLO) Consortium (USUHS)	51.443	18.083	19.058	29.480	0.000	29.480	29.870	30.267	30.672	31.085	Continuing	Continuing
479: Framingham Longitudinal Study (USUHS)	14.586	4.765	5.018	5.118	0.000	5.118	5.220	5.324	5.430	5.539	Continuing	Continuing
499: MHS Financial System Acquisition (DHA)	37.702	5.792	6.051	6.092	0.000	6.092	6.143	6.266	6.388	6.516	Continuing	Continuing
506: Health Research for Improved Medical Readiness and Healthcare Delivery (USUHS)	23.045	11.022	11.631	11.883	0.000	11.883	12.141	12.384	12.632	12.885	Continuing	Continuing

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Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
0130: <i>Defense Health Program I BA 2: RDT&E</i>					PE 0603115DHA I <i>Medical Technology Development</i>							
507: <i>Brain Injury and Disease Prevention, Treatment and Research (USUHS)</i>	26.900	13.378	14.132	14.415	0.000	14.415	14.703	14.997	15.297	15.603	Continuing	Continuing
508: <i>Psychological Health and Resilience (USUHS)</i>	14.140	7.042	7.428	7.577	0.000	7.577	7.729	7.884	8.042	8.203	Continuing	Continuing
509: <i>Innovative Technologies for Improved Medical Diagnoses, Rehabilitation and Warfighter Readiness (USUHS)</i>	33.033	13.623	14.505	14.916	0.000	14.916	15.333	15.638	15.951	16.272	Continuing	Continuing
511: <i>Cancer Moonshot Initiatives</i>	0.000	0.000	12.300	12.500	0.000	12.500	12.800	13.100	13.400	13.668	Continuing	Continuing

A. Mission Description and Budget Item Justification

Guidance for Development of the Force - Medical Technology Development: This program element (PE) provides funding for promising candidate solutions that are selected for initial safety and effectiveness testing in animal studies and/or small scale human clinical trials regulated by the US Food and Drug Administration prior to licensing for human use. 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 Department of Defense and multi-agency priority investments in science, technology, research, and development. Medical research, development, test, and evaluation 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, and Military Families, and the National Biodefense Strategy.

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. As research efforts mature, the most promising will transition to advanced concept development funding, PE 0604110. For knowledge products, successful findings will transition into clinical practice guidelines.

Three Centers of Excellence (CoEs) receive medical technology development funds. Management of the Breast and Gynecological Cancer CoEs transfer from the Army to the Uniformed Services University beginning in FY 2017. The Cardiac Health CoE provides evidence-based personalized patient engagement approaches for comprehensive cardiac event prevention through education, outcomes research and technology tools, as well as molecular research to detect cardiovascular disease at an early stage to ultimately discover a signature for cardiovascular health, to find new genes that significantly increase risk for heart attack in Service members and other beneficiaries, and identify molecular markers of obesity and weight loss.

For the Navy Bureau of Medicine and Surgery, this program element includes funds for research management support costs. The Outside Continental US (OCONUS) laboratories conduct focused medical research on vaccine development for Malaria, Diarrhea Diseases, and Dengue Fever. In addition to entomology, HIV studies, surveillance and outbreak response under the Global Emerging Infections Surveillance (GEIS) program and risk assessment studies on a number of other infectious diseases that are present in the geographical regions where the laboratories are located. The CONUS laboratories conduct research on Military Operational Medicine, Combat Casualty Care, Diving and Submarine Medicine, Infectious Diseases, Environmental and Occupational Health, Directed Energy, and Aviation Medicine and Human Performance.

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Appropriation/Budget Activity 0130: <i>Defense Health Program I BA 2: RDT&E</i>	R-1 Program Element (Number/Name) PE 0603115DHA I <i>Medical Technology Development</i>
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For the Air Force Medical Service (AFMS), medical research and development programs are divided into five primary thrust areas: En-Route care, Expeditionary Medicine, Operational Medicine (in-garrison care), Force Health Protection (FHP) (detect, prevent, threats), and Human Performance. Expeditionary Medicine is focused on care on the battlefield and in field hospitals prior to transporting patients out of theater to CONUS, and studies trauma resuscitation, hemorrhage control, and other life-saving interventions to keep critically wounded patients alive in the golden hour and to the next level of care. The AFMS is the only service transporting patients on long aeromedical evacuation missions. Therefore, the En-Route care thrust area studies include investigation on the impact of transport on patient and providers (including cabin altitude, noise, vibration, and environmental issues affecting physiology on the aircraft), patient safety factors during transport, medical technologies for use during transport, and research to support education and training with simulation for En-Route care providers. The Human Performance thrust area focuses on optimizing airmen physical and psychological performance, assessing the physical and cognitive demands on the operator (pilot/aircrew), facilitating a safe aviation environment through technology and equipment assessment, and improving/ sustaining airmen performance through training. Medical development and biomedical technology investments in FHP seek to deliver an improved FHP capability across the full spectrum of operations with research that prevents injury/ illness through improved identification and control of health risks. Under FHP, sub-project areas include Occupational Hazard Exposure (Includes Flight Hazards and Integrated Risk), Targeted Risk Identification, Mitigation and Treatment (Formerly Pathogen ID and Novel Therapeutics and includes Big Data), FHP Technologies Development and Assessment (Assay and disease detection), and Health Surveillance, Infection, Injury & Immunity. FHP also includes Innovations and Personalized Medicine. Operational medicine is focused on in garrison care – our next most critical issue post OIF/OEF – and how to care for the whole patient and consideration of comorbidities in treatment of wounded warriors and dependents.

For the Uniformed Services University of the Health Sciences (USUHS), medical development programs include the Prostate Cancer Center of Excellence (CoE), the Center for Neuroscience and Regenerative Medicine (CNRM), the Pain CoE, the Breast Cancer CoE, and the Gynecological Cancer CoE. The Prostate CoE, formerly a CSI, was chartered in 1992 to conduct basic, clinical, and translational research programs to combat diseases of the prostate. The Center's mission is fulfilled primarily through its three principal programs -- the Clinical Translational Research Center, the Basic Science Research Program, and the Tri-Service Multicenter Prostate Cancer Database, which encompasses its clinical research work with other participating military medical centers. These affiliated sites contribute data and biospecimens obtained from prostate cancer patients who participate in clinical trials. CNRM brings together the expertise of clinicians and scientists across disciplines to catalyze innovative approaches to TBI research. CNRM research programs emphasize aspects of high relevance to military populations, with a primary focus on patients at the Walter Reed National Military Medical Center. Beginning in FY17, the Breast Cancer CoE funding line and the Gynecological Cancer CoE funding line are transferred from the Army to USUHS.

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Appropriation/Budget Activity 0130: <i>Defense Health Program I BA 2: RDT&E</i>	R-1 Program Element (Number/Name) PE 0603115DHA I <i>Medical Technology Development</i>
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B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	235.197	320.496	326.667	0.000	326.667
Current President's Budget	2,020.169	2,307.376	326.667	0.000	326.667
Total Adjustments	1,784.972	1,986.880	0.000	0.000	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	1,842.980	1,986.880			
• Congressional Directed Transfers	-	-			
• Reprogrammings	5.001	-			
• SBIR/STTR Transfer	-63.009	-			

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 300A: *CSI - Congressional Special Interests*

Congressional Add: 245A - *Amyotrophic Lateral Sclerosis (ALS) Research*

Congressional Add: 248 - *Program increase - Armed Forces Institute of Regenerative Medicine III*

Congressional Add: 293A - *Autism Research*

Congressional Add: 296A - *Bone Marrow Failure Disease Research*

Congressional Add: 310A - *Peer-Reviewed Ovarian Cancer Research*

Congressional Add: 328A - *Peer-Reviewed Multiple Sclerosis Research*

Congressional Add: 335A - *Peer-Reviewed Cancer Research*

Congressional Add: 336A - *Peer-Reviewed Lung Cancer Research*

Congressional Add: 337A - *Peer-Reviewed Orthopaedic Research*

Congressional Add: 338A - *Peer-Reviewed Spinal Cord Research*

Congressional Add: 339A - *Peer-Reviewed Vision Research*

Congressional Add: 352A - *Traumatic Brain Injury/Psychological Health Research*

Congressional Add: 380A - *Peer-Reviewed Breast Cancer Research*

Congressional Add: 390A - *Peer-Reviewed Prostate Cancer Research*

Congressional Add: 396A - *Research in Alcohol and Substance Use Disorders*

Congressional Add: 400A - *Peer-Reviewed Medical Research*

Congressional Add: 417A - *Peer-Reviewed Alzheimer Research*

	FY 2022	FY 2023
	38.665	40.000
	-	10.000
	14.499	15.000
	7.250	7.500
	43.499	45.000
	19.333	20.000
	125.664	130.000
	19.333	25.000
	28.999	30.000
	38.665	40.000
	19.333	20.000
	169.163	175.000
	144.997	150.000
	106.328	110.000
	3.867	4.000
	357.660	370.000
	14.499	15.000

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Congressional Add Details (\$ in Millions, and Includes General Reductions)	FY 2022	FY 2023
Congressional Add: 439A - <i>Joint Warfighter Medical Research</i>	23.199	9.000
Congressional Add: 452A - <i>Peer-Reviewed Reconstructive Transplant Research</i>	11.600	12.000
Congressional Add: 454A - <i>Orthotics and Prosthetics Outcomes Research</i>	19.333	15.000
Congressional Add: 456A - <i>HIV/AIDS Program</i>	17.524	20.000
Congressional Add: 459A - <i>Peer-Reviewed Epilepsy Research</i>	11.600	12.000
Congressional Add: 463A – <i>Program Increase: Restore Core Research Funding Reduction (GDF)</i>	211.229	212.380
Congressional Add: 495 - <i>Peer-Reviewed Tick-Borne Disease Research</i>	6.766	7.000
Congressional Add: 496 - <i>Trauma Clinical Research Program</i>	9.635	5.000
Congressional Add: 501 - <i>Peer-Reviewed Hearing Restoration Research (Army)</i>	9.666	5.000
Congressional Add: 502 - <i>CSI - Peer-Reviewed Kidney Cancer Research (Army)</i>	48.331	50.000
Congressional Add: 503 - <i>CSI - Peer-Reviewed Lupus Research (Army)</i>	9.666	10.000
Congressional Add: 540A - <i>Global HIV/AIDS Prevention (Navy)</i>	10.000	12.000
Congressional Add: 660A - <i>Tuberous Sclerosis Complex (TSC)</i>	7.733	8.000
Congressional Add: 790A - <i>Peer-Reviewed Duchenne Muscular Dystrophy</i>	9.666	10.000
Congressional Add: 512 - <i>Peer-Reviewed Melanoma Research</i>	38.665	40.000
Congressional Add: 513 - <i>Chronic Pain Management</i>	14.499	15.000
Congressional Add: 514 - <i>Combat Readiness Medical Research</i>	9.666	5.000
Congressional Add: 515 - <i>Peer-Reviewed Pancreatic Cancer Research</i>	14.499	15.000
Congressional Add: 516 - <i>Peer-Reviewed Rare Cancers Research</i>	16.916	17.500
Congressional Add: 518 - <i>Peer-Reviewed Toxic Exposures Research</i>	28.999	30.000
Congressional Add: 522 - <i>Program Increase - USUHS military surgical teams simulation technology</i>	4.836	-
Congressional Add: 523 - <i>Program Increase - USUHS multi-domain operations</i>	33.799	30.000
Congressional Add: 300A - <i>Congressional Add - Brain injury and disease prevention research</i>	57.941	65.000
Congressional Add: 300A - <i>Congressional Add - Clinical research</i>	9.659	30.000
Congressional Add: 300A - <i>Congressional Add - Optimizing military health and performance</i>	-	7.000
Congressional Add: 300A - <i>Congressional Add - Vector borne health protection</i>	-	5.000
Congressional Add: 300A - <i>Congressional Add - Individual occupational and environmental exposure monitoring</i>	-	10.000

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Defense Health Agency	Date: March 2023
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Appropriation/Budget Activity 0130: <i>Defense Health Program I BA 2: RDT&E</i>	R-1 Program Element (Number/Name) PE 0603115DHA I <i>Medical Technology Development</i>
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Congressional Add Details (\$ in Millions, and Includes General Reductions)	FY 2022	FY 2023
Congressional Add: 300A - <i>Congressional Add - Telemedicine and advanced technology research center</i>	-	2.000
Congressional Add: 300A - <i>Congressional Add - Syndromic surveillance for emerging biothreats</i>	-	4.500
Congressional Add: 300A - <i>Congressional Add - Human performance optimization</i>	-	10.000
Congressional Add: 300A - <i>Congressional Add - Global noncommunicable disease interventions</i>	-	10.000
Congressional Add: 300A - <i>Congressional Add - Special operations TBI pilot program</i>	-	4.000
Congressional Add: 300A - <i>Congressional Add - Military-civilian trauma partnerships</i>	-	5.000
Congressional Add: 300A - <i>Congressional Add - Non-direction blast sensors</i>	-	2.000
Congressional Add: 300A - <i>Congressional Add - Wound management technology development</i>	-	25.000
Congressional Add: 300A - <i>Congressional Add - National Intrepid Center of Excellence creative arts therapy</i>	-	10.000
Congressional Add: <i>Peer-reviewed military burn research</i>	-	10.000
Congressional Add: <i>Peer-reviewed Neurofibromatosis research</i>	-	25.000
Congressional Add: <i>Peer-reviewed Parkinson's research</i>	-	16.000
Congressional Add Subtotals for Project: 300A	1,787.181	1,986.880
Project: 373H: GDF - MTD (Medical Advanced Technology)		
Congressional Add: <i>N/A</i>	0.000	-
Congressional Add Subtotals for Project: 373H	0.000	-
Project: 511: Cancer Moonshot Initiatives		
Congressional Add: <i>Cancer Moonshot Initiatives (USUHS)</i>	0.000	-
Congressional Add Subtotals for Project: 511	0.000	-
Congressional Add Totals for all Projects	1,787.181	1,986.880

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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 0603115DHA / Medical Technology Development	Project (Number/Name) 300A / CSI - Congressional Special Interests
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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
300A: CSI - Congressional Special Interests	4,594.732	1,787.181	1,986.880	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	-

A. Mission Description and Budget Item Justification

In FY 2023, the Defense Health Program funded Congressional Special Interest (CSI) directed research. The strategy for the FY 2023 Congressionally-directed research program is to stimulate innovative research through a competitive, focused, peer-reviewed medical research at intramural and extramural research sites. Because of the CSI annual structure, out-year funding is not programmed.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023
<p>Congressional Add: 245A - Amyotrophic Lateral Sclerosis (ALS) Research</p> <p>FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for research in Amyotrophic Lateral Sclerosis (ALS). ALS is a degenerative neurological disorder that causes muscle weakness and atrophy throughout the body. The ALS Research Program is a broadly-competed, peer-reviewed research program with the goal to contribute to a cure for ALS by funding innovative preclinical research to develop new treatments for ALS.</p> <p>FY 2023 Plans: This Congressional Special Interest initiative provided funds for research in Amyotrophic Lateral Sclerosis (ALS). ALS is a degenerative neurological disorder that causes muscle weakness and atrophy throughout the body. The ALS Research Program is a broadly-competed, peer-reviewed research program with the goal to contribute to a cure for ALS by funding innovative preclinical research to develop new treatments for ALS.</p>	38.665	40.000
<p>Congressional Add: 248 - Program increase - Armed Forces Institute of Regenerative Medicine III</p> <p>FY 2023 Plans: CSI-Enacted Prog Increase</p>	-	10.000
<p>Congressional Add: 293A - Autism Research</p> <p>FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for Autism research. The Autism Research Program seeks to improve treatment outcomes of Autism Spectrum Disorder (ASD), lead</p>	14.499	15.000

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency		Date: March 2023	
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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
to a better understanding of ASD, and integrate basic science and clinical observations by promoting innovative research.			
FY 2023 Plans: This Congressional Special Interest initiative provided funds for Autism research. The Autism Research Program seeks to improve treatment outcomes of Autism Spectrum Disorder (ASD), lead to a better understanding of ASD, and integrate basic science and clinical observations by promoting innovative research.			
Congressional Add: 296A - Bone Marrow Failure Disease Research		7.250	7.500
FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for bone marrow failure diseases research. The mission of the Bone Marrow Failure Research Program is to sponsor innovative research that will advance the understanding of inherited and acquired bone marrow failure diseases, and improve the health and life of individuals living with these diseases, with the ultimate goal of prevention and/or cure. This effort has solicited research proposals focused on bone marrow failure syndromes and their long-term effects from the basic science and clinical research sectors.			
FY 2023 Plans: This Congressional Special Interest initiative provided funds for bone marrow failure diseases research. The mission of the Bone Marrow Failure Research Program is to sponsor innovative research that will advance the understanding of inherited and acquired bone marrow failure diseases, and improve the health and life of individuals living with these diseases, with the ultimate goal of prevention and/or cure. This effort has solicited research proposals focused on bone marrow failure syndromes and their long-term effects from the basic science and clinical research sectors.			
Congressional Add: 310A - Peer-Reviewed Ovarian Cancer Research		43.499	45.000
FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for ovarian cancer research. In striving to achieve the goal of eliminating ovarian cancer, the Ovarian Cancer Research Program (OCRCP) challenges the research community to address high impact, innovative research. The FY 2018 OCRP solicited innovative ideas that provide new paradigms, leverage critical resources, facilitate synergistic, multidisciplinary partnerships, and cultivate the next generation of investigators in ovarian cancer.			
FY 2023 Plans: This Congressional Special Interest initiative provided funds for ovarian cancer research. In striving to achieve the goal of eliminating ovarian cancer, the Ovarian Cancer Research Program (OCRCP) challenges the research community to address high impact, innovative research. The FY 2018 OCRP solicited innovative ideas that provide new paradigms, leverage critical resources, facilitate synergistic, multidisciplinary partnerships, and cultivate the next generation of investigators in ovarian cancer.			
Congressional Add: 328A - Peer- Reviewed Multiple Sclerosis Research		19.333	20.000

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Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 300A / <i>CSI - Congressional Special Interests</i>
B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023
<p>FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for Multiple Sclerosis (MS) research. The mission of the Multiple Sclerosis Research Program (MSRP) is to support pioneering concepts and high-impact research relevant to the prevention, etiology, pathogenesis, assessment, and treatment of MS.</p> <p>FY 2023 Plans: This Congressional Special Interest initiative provided funds for Multiple Sclerosis (MS) research. The mission of the Multiple Sclerosis Research Program (MSRP) is to support pioneering concepts and high-impact research relevant to the prevention, etiology, pathogenesis, assessment, and treatment of MS.</p>		
<p>Congressional Add: 335A - Peer-Reviewed Cancer Research</p> <p>FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for the study of cancers designated by Congress: adrenal cancer; bladder cancer; blood cancers; brain cancer; colorectal cancer; immunotherapy; Listeria-based regimens for cancer; liver cancer, lymphoma; melanoma and other skin cancers; mesothelioma; myeloma; neuroblastoma; pancreatic cancer; pediatric brain tumors; cancers in children, adolescences and young adults; and stomach cancer. The goal of the Peer-Reviewed Cancer Research Program is to improve the quality of life by decreasing the impact of cancer on Service members, their families, and the American public.</p> <p>FY 2023 Plans: This Congressional Special Interest initiative provided funds for the study of cancers designated by Congress: adrenal cancer; bladder cancer; blood cancers; brain cancer; colorectal cancer; immunotherapy; Listeria-based regimens for cancer; liver cancer, lymphoma; melanoma and other skin cancers; mesothelioma; myeloma; neuroblastoma; pancreatic cancer; pediatric brain tumors; cancers in children, adolescences and young adults; and stomach cancer. The goal of the Peer-Reviewed Cancer Research Program is to improve the quality of life by decreasing the impact of cancer on Service members, their families, and the American public.</p>	125.664	130.000
<p>Congressional Add: 336A - Peer-Reviewed Lung Cancer Research</p> <p>FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for lung cancer research. The Lung Cancer Research Program is a broadly-competed, peer-reviewed research program with the goal to eradicate deaths from lung cancer to better the health and welfare of military Service members, Veterans, their families, and the American public.</p> <p>FY 2023 Plans: This Congressional Special Interest initiative provided funds for lung cancer research. The Lung Cancer Research Program is a broadly-competed, peer-reviewed research program with the goal to eradicate</p>	19.333	25.000

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023
deaths from lung cancer to better the health and welfare of military Service members, Veterans, their families, and the American public.		
Congressional Add: 337A - Peer-Reviewed Orthopaedic Research FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for orthopedic research to advance optimal treatment and rehabilitation from neuromusculoskeletal (bone, muscle, tendon, ligament, nerve, and cartilage) injuries sustained during combat or combat-related activities. The goal of the FY 2018 Peer-Reviewed Orthopaedic Research Program was to provide all Warriors affected by orthopedic injuries sustained in the defense of our Constitution the opportunity for optimal recovery and restoration of function. FY 2023 Plans: This Congressional Special Interest initiative provided funds for orthopedic research to advance optimal treatment and rehabilitation from neuromusculoskeletal (bone, muscle, tendon, ligament, nerve, and cartilage) injuries sustained during combat or combat-related activities. The goal of the FY 2018 Peer-Reviewed Orthopaedic Research Program was to provide all Warriors affected by orthopedic injuries sustained in the defense of our Constitution the opportunity for optimal recovery and restoration of function.	28.999	30.000
Congressional Add: 338A - Peer-Reviewed Spinal Cord Research FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for spinal cord injury (SCI) research. The FY 2018 Spinal Cord Injury Research Program challenged the scientific community to design research that will foster new directions for and address neglected issues in the field of SCI research with particular focus on three areas: (1) pre-hospital, prolonged field care, en route care, and early hospital management of SCI; (2) development, validation, and timing of promising interventions to address consequences of SCI and to improve recovery; and (3) identification and validation of best practices in SCI. FY 2023 Plans: This Congressional Special Interest initiative provided funds for spinal cord injury (SCI) research. The FY 2018 Spinal Cord Injury Research Program challenged the scientific community to design research that will foster new directions for and address neglected issues in the field of SCI research with particular focus on three areas: (1) pre-hospital, prolonged field care, en route care, and early hospital management of SCI; (2) development, validation, and timing of promising interventions to address consequences of SCI and to improve recovery; and (3) identification and validation of best practices in SCI.	38.665	40.000
Congressional Add: 339A - Peer-Reviewed Vision Research FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for vision restoration research. The Peer-Reviewed Vision Research Program supported research targeting the causes, effects and treatments of eye damage, visual deficits due to traumatic brain injury (TBI) and diseases that, despite their different mechanisms of development, all have a common end result -- degeneration of the critical components	19.333	20.000

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
<p>of the eye and impairment or loss of vision. The results of this research are anticipated to support restoration and maintenance of visual function to ensure and sustain combat readiness and directly benefit the lives of military, Veteran, and civilian populations.</p> <p>FY 2023 Plans: This Congressional Special Interest initiative provided funds for vision restoration research. The Peer-Reviewed Vision Research Program supported research targeting the causes, effects and treatments of eye damage, visual deficits due to traumatic brain injury (TBI) and diseases that, despite their different mechanisms of development, all have a common end result -- degeneration of the critical components of the eye and impairment or loss of vision. The results of this research are anticipated to support restoration and maintenance of visual function to ensure and sustain combat readiness and directly benefit the lives of military, Veteran, and civilian populations.</p>			
<p>Congressional Add: 352A - Traumatic Brain Injury/Psychological Health Research</p> <p>FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for research aimed to prevent, mitigate, and treat the effects of combat-relevant traumatic stress and combat-related traumatic brain injury (TBI) on function, wellness, and overall quality of life, including interventions across the deployment lifecycle for warriors, Veterans, family members, caregivers, and communities.</p> <p>FY 2023 Plans: This Congressional Special Interest initiative provided funds for research aimed to prevent, mitigate, and treat the effects of combat-relevant traumatic stress and combat-related traumatic brain injury (TBI) on function, wellness, and overall quality of life, including interventions across the deployment lifecycle for warriors, Veterans, family members, caregivers, and communities.</p>		169.163	175.000
<p>Congressional Add: 380A - Peer-Reviewed Breast Cancer Research</p> <p>FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for breast cancer research. The Breast Cancer Research Program challenged the scientific community to design research that addresses the urgency of ending breast cancer. Applications were required to address at least one of nine overarching challenges, which were focused on preventing breast cancer, identifying determinants of breast cancer initiation, risk, or susceptibility, distinguishing deadly from non-deadly breast cancers, conquering the problems of over-diagnosis and over-treatment, identifying what drives breast cancer growth and determining how to stop it, identifying why some breast cancers become metastatic, determining how to prevent recurrence, revolutionizing treatment regimens by replacing them with ones that are more effective, less toxic, and impact survival, and eliminating the mortality associated with metastatic breast cancer.</p> <p>FY 2023 Plans: This Congressional Special Interest initiative provided funds for breast cancer research. The Breast Cancer Research Program challenged the scientific community to design research that addresses</p>		144.997	150.000

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
<p>the urgency of ending breast cancer. Applications were required to address at least one of nine overarching challenges, which were focused on preventing breast cancer, identifying determinants of breast cancer initiation, risk, or susceptibility, distinguishing deadly from non-deadly breast cancers, conquering the problems of over-diagnosis and over-treatment, identifying what drives breast cancer growth and determining how to stop it, identifying why some breast cancers become metastatic, determining how to prevent recurrence, revolutionizing treatment regimens by replacing them with ones that are more effective, less toxic, and impact survival, and eliminating the mortality associated with metastatic breast cancer.</p>			
<p>Congressional Add: 390A - Peer-Reviewed Prostate Cancer Research</p> <p>FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for prostate cancer research. The vision for the Prostate Cancer Research Program (PCRP) was to conquer prostate cancer by funding research to eliminate death from prostate cancer and enhance the well-being of men experiencing the impact of the disease. To address the most critical current needs in prostate cancer research and clinical care, the PCRP solicited research applications addressing four overarching challenges: (1) distinguish aggressive from indolent disease in men newly diagnosed with prostate cancer; (2) develop strategies to prevent progression to lethal prostate cancer; (3) develop effective treatments and address mechanisms of resistance for men with high risk or metastatic prostate cancer; and (4) develop strategies to optimize the physical and mental health of men with prostate cancer. In addition, research projects were solicited in the areas of: data science and analytics; imaging and targeted radionuclide therapy; population science; precision medicine, screening, and surveillance; survivorship, including psychosocial impact on the patient and family; therapy and mechanisms of resistance and response; and tumor and microenvironment biology.</p> <p>FY 2023 Plans: This Congressional Special Interest initiative provided funds for prostate cancer research. The vision for the Prostate Cancer Research Program (PCRP) was to conquer prostate cancer by funding research to eliminate death from prostate cancer and enhance the well-being of men experiencing the impact of the disease. To address the most critical current needs in prostate cancer research and clinical care, the PCRP solicited research applications addressing four overarching challenges: (1) distinguish aggressive from indolent disease in men newly diagnosed with prostate cancer; (2) develop strategies to prevent progression to lethal prostate cancer; (3) develop effective treatments and address mechanisms of resistance for men with high risk or metastatic prostate cancer; and (4) develop strategies to optimize the physical and mental health of men with prostate cancer. In addition, research projects were solicited in the areas of: data science and analytics; imaging and targeted radionuclide therapy; population science; precision medicine, screening, and surveillance;</p>		106.328	110.000

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	
survivorship, including psychosocial impact on the patient and family; therapy and mechanisms of resistance and response; and tumor and microenvironment biology.			
Congressional Add: 396A - Research in Alcohol and Substance Use Disorders FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for alcohol and substance use disorders (ASUD) research. The goal of the Alcohol and Substance Abuse Disorders Research Program was to identify and develop new medications to improve treatment outcomes for ASUD, especially related to traumatic brain injury (TBI) and post-traumatic stress disorder (PTSD). FY 2023 Plans: This Congressional Special Interest initiative provided funds for alcohol and substance use disorders (ASUD) research. The goal of the Alcohol and Substance Abuse Disorders Research Program was to identify and develop new medications to improve treatment outcomes for ASUD, especially related to traumatic brain injury (TBI) and post-traumatic stress disorder (PTSD).	3.867	4.000	
Congressional Add: 400A - Peer-Reviewed Medical Research FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for military-relevant research in Congressionally directed topic areas toward the goal of improving the health and well-being of all military Service members, Veterans, and beneficiaries. The 52 Congressionally-directed topics for were: Acute Lung Injury, Antimicrobial Resistance, Arthritis, Burn Pit Exposure, Cardiomyopathy, Cerebellar Ataxia, Chronic Migraine and Post-traumatic Headache, Chronic Pain Management, Congenital Heart Disease, Constrictive Bronchiolitis, Diabetes, Dystonia, Eating Disorders, Emerging Infectious Diseases, Endometriosis, Epidermolysis Bullosa, Focal Segmental Glomerulosclerosis, Fragile X, Frontotemporal Degeneration, Guillain-Barre Syndrome, Hepatitis B and C, Hereditary Angioedema, Hydrocephalus, Immunomonitoring of Intestinal Transplants, Inflammatory Bowel Diseases, Interstitial Cystitis, Lung Injury, Malaria, Metals Toxicology, Mitochondrial Disease, Musculoskeletal Disorders, Myotonic Dystrophy, Non-Opioid Pain Management, Nutrition Optimization, Pancreatitis, Pathogen-Inactivated Blood Products, Post-Traumatic Osteoarthritis, Pressure Ulcers, Pulmonary Fibrosis, Respiratory Health, Rett Syndrome, Rheumatoid Arthritis, Scleroderma, Sleep Disorders, Spinal Muscular Atrophy, Sustained-Release Drug Delivery, Tinnitus, Tissue Regeneration, Tuberculosis, Vaccine Development for Infectious Diseases, Vascular Malformations, and Women's Heart Disease. FY 2023 Plans: This Congressional Special Interest initiative provided funds for military-relevant research in Congressionally directed topic areas toward the goal of improving the health and well-being of all military Service members, Veterans, and beneficiaries. The 52 Congressionally-directed topics for were: Acute Lung Injury, Antimicrobial Resistance, Arthritis, Burn Pit Exposure, Cardiomyopathy, Cerebellar Ataxia, Chronic Migraine	357.660	370.000	

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023
and Post-traumatic Headache, Chronic Pain Management, Congenital Heart Disease, Constrictive Bronchiolitis, Diabetes, Dystonia, Eating Disorders, Emerging Infectious Diseases, Endometriosis, Epidermolysis Bullosa, Focal Segmental Glomerulosclerosis, Fragile X, Frontotemporal Degeneration, Guillain-Barre Syndrome, Hepatitis B and C, Hereditary Angioedema, Hydrocephalus, Immunomonitoring of Intestinal Transplants, Inflammatory Bowel Diseases, Interstitial Cystitis, Lung Injury, Malaria, Metals Toxicology, Mitochondrial Disease, Musculoskeletal Disorders, Myotonic Dystrophy, Non-Opioid Pain Management, Nutrition Optimization, Pancreatitis, Pathogen-Inactivated Blood Products, Post-Traumatic Osteoarthritis, Pressure Ulcers, Pulmonary Fibrosis, Respiratory Health, Rett Syndrome, Rheumatoid Arthritis, Scleroderma, Sleep Disorders, Spinal Muscular Atrophy, Sustained-Release Drug Delivery, Tinnitus, Tissue Regeneration, Tuberculosis, Vaccine Development for Infectious Diseases, Vascular Malformations, and Women's Heart Disease.		
Congressional Add: 417A - Peer-Reviewed Alzheimer Research FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for Alzheimer's disease (AD) research. The Peer-Reviewed Alzheimer's Research Program (PRARP) sought to: (1) address the long-term consequences of traumatic brain injury (TBI) as they pertain to AD and AD-related dementias (ADRD); and (2) reduce the burden on AD/ADRD-affected individuals and caregivers, especially in the military and Veteran communities. FY 2023 Plans: This Congressional Special Interest initiative provided funds for Alzheimer's disease (AD) research. The Peer-Reviewed Alzheimer's Research Program (PRARP) sought to: (1) address the long-term consequences of traumatic brain injury (TBI) as they pertain to AD and AD-related dementias (ADRD); and (2) reduce the burden on AD/ADRD-affected individuals and caregivers, especially in the military and Veteran communities.	14.499	15.000
Congressional Add: 439A - Joint Warfighter Medical Research FY 2022 Accomplishments: The FY 2022 Joint Warfighter Medical Research Program (JWMRP) provides continuing support for promising projects previously funded by Congressional Special Interest initiatives. The focus is to augment and accelerate high priority DoD and Service medical requirements that are close to achieving their objectives and yield a benefit to military medicine. FY 2023 Plans: The FY 2023 Joint Warfighter Medical Research Program (JWMRP) provides continuing support for promising projects previously funded by Congressional Special Interest initiatives. The focus is to augment and accelerate high priority DoD and Service medical requirements that are close to achieving their objectives and yield a benefit to military medicine.	23.199	9.000
Congressional Add: 452A - Peer-Reviewed Reconstructive Transplant Research	11.600	12.000

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	
FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for reconstructive transplantation research. The FY 2018 Reconstructive Transplant Research Program (RTRP) focused on research in reconstructive transplantation for the refinement of approaches for hand, face, and other vascularized composite tissue allografts, which includes multiple body system components such as skin, muscle, tendon, nerves, bone, and blood vessels. In addition, the RTRP focused on research aimed toward improving access to reconstructive transplants, and on immunomodulation strategies that can reduce the need for immunosuppression regimens.			
FY 2023 Plans: This Congressional Special Interest initiative provided funds for reconstructive transplantation research. The FY 2018 Reconstructive Transplant Research Program (RTRP) focused on research in reconstructive transplantation for the refinement of approaches for hand, face, and other vascularized composite tissue allografts, which includes multiple body system components such as skin, muscle, tendon, nerves, bone, and blood vessels. In addition, the RTRP focused on research aimed toward improving access to reconstructive transplants, and on immunomodulation strategies that can reduce the need for immunosuppression regimens.			
Congressional Add: 454A - Orthotics and Prosthetics Outcomes Research	19.333	15.000	
FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for orthotics and prosthetics outcomes research. The goal of the FY 2018 Orthotics and Prosthetics Outcomes Research Program was to support research that evaluates the comparative effectiveness of orthotic and prosthetic devices using patient-centric outcomes for Service members and Veterans who have undergone limb amputation. The program focused on outcomes-based best practices through analysis of the merits of prosthetic and orthotic devices currently available, and not on the development of new, or the improvement of existing, technology. The program intent was to generate clinically useful evidence to enhance and optimize patient outcomes.			
FY 2023 Plans: This Congressional Special Interest initiative provided funds for orthotics and prosthetics outcomes research. The goal of the FY 2018 Orthotics and Prosthetics Outcomes Research Program was to support research that evaluates the comparative effectiveness of orthotic and prosthetic devices using patient-centric outcomes for Service members and Veterans who have undergone limb amputation. The program focused on outcomes-based best practices through analysis of the merits of prosthetic and orthotic devices currently available, and not on the development of new, or the improvement of existing, technology. The program intent was to generate clinically useful evidence to enhance and optimize patient outcomes.			
Congressional Add: 456A - HIV/AIDS Program	17.524	20.000	

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023
FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for HIV/AIDS research includes all medical research that attempts to prevent, treat, or cure HIV/AIDS, as well as fundamental research about the nature of HIV as an infectious agent and AIDS as the disease caused by HIV.		
FY 2023 Plans: This Congressional Special Interest initiative provided funds for HIV/AIDS research includes all medical research that attempts to prevent, treat, or cure HIV/AIDS, as well as fundamental research about the nature of HIV as an infectious agent and AIDS as the disease caused by HIV.		
Congressional Add: 459A - Peer-Reviewed Epilepsy Research	11.600	12.000
FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for traumatic brain injury (TBI)-related epilepsy research. The Peer Reviewed Epilepsy Research Program supported studies to examine the interconnection between TBI and epilepsy in four scientific focus areas: (1) epidemiology; (2) markers and mechanisms of post traumatic epilepsy; (3) models of post-traumatic epilepsy; and (4) research into psychogenic (non-epileptic) seizures.		
FY 2023 Plans: This Congressional Special Interest initiative provided funds for traumatic brain injury (TBI)-related epilepsy research. The Peer Reviewed Epilepsy Research Program supported studies to examine the interconnection between TBI and epilepsy in four scientific focus areas: (1) epidemiology; (2) markers and mechanisms of post traumatic epilepsy; (3) models of post-traumatic epilepsy; and (4) research into psychogenic (non-epileptic) seizures.		
Congressional Add: 463A – Program Increase: Restore Core Research Funding Reduction (GDF)	211.229	212.380
FY 2022 Accomplishments: This Congressional Special Interest initiative was directed toward DHP core research initiatives in PE 0603115. Funds supported medical technology development efforts in the areas of military operational medicine, combat casualty care, military infectious diseases, clinical and rehabilitative medicine, medical simulation and information sciences, and radiation health effects.		
FY 2023 Plans: This Congressional Special Interest initiative was directed toward DHP core research initiatives in PE 0603115. Funds supported medical technology development efforts in the areas of military operational medicine, combat casualty care, military infectious diseases, clinical and rehabilitative medicine, medical simulation and information sciences, and radiation health effects.		
Congressional Add: 495 - Peer-Reviewed Tick-Borne Disease Research	6.766	7.000
FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for tick-borne diseases research. The Peer Reviewed Tick-Borne Disease Research Program’s mission was to support		

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
<p>research focused on understanding the pathogenesis of Lyme disease and other tick-borne illnesses and on delivering innovative solutions to prevent and better diagnose and treat their manifestations.</p> <p>FY 2023 Plans: This Congressional Special Interest initiative provided funds for tick-borne diseases research. The Peer Reviewed Tick-Borne Disease Research Program’s mission was to support research focused on understanding the pathogenesis of Lyme disease and other tick-borne illnesses and on delivering innovative solutions to prevent and better diagnose and treat their manifestations.</p>			
<p>Congressional Add: 496 -Trauma Clinical Research Program</p> <p>FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for advancing trauma clinical research. Through a competitive Request for Proposals (RFP) process, the Department of Defense (DoD) has created a coordinated, multi-institutional clinical research network of civilian and military trauma centers to address the military relevant priorities and gaps in trauma care. The Indefinite Deliverable Indefinite Quantity (IDIQ) contract established the Linking Investigations in Trauma and Emergency Services (LITES) trauma research network. The LITES network creates a standing research consortium of US trauma systems and centers with the capability to conduct prospective, multicenter, injury care and outcomes research of relevance to the DoD. The LITES network is led by the University of Pittsburgh and features nine partnering sites, and the network has to ability to expand or contract based on the research performed.</p> <p>FY 2023 Plans: This Congressional Special Interest initiative provided funds for advancing trauma clinical research. Through a competitive Request for Proposals (RFP) process, the Department of Defense (DoD) has created a coordinated, multi-institutional clinical research network of civilian and military trauma centers to address the military relevant priorities and gaps in trauma care. The Indefinite Deliverable Indefinite Quantity (IDIQ) contract established the Linking Investigations in Trauma and Emergency Services (LITES) trauma research network. The LITES network creates a standing research consortium of US trauma systems and centers with the capability to conduct prospective, multicenter, injury care and outcomes research of relevance to the DoD. The LITES network is led by the University of Pittsburgh and features nine partnering sites, and the network has to ability to expand or contract based on the research performed.</p>		9.635	5.000
<p>Congressional Add: 501 - Peer-Reviewed Hearing Restoration Research (Army)</p> <p>FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds to pursue promising, necessary research for treatment of burdensome and very prevalent auditory system injury. The vision of the Hearing Restoration Research Program is to improve the operational effectiveness, medical readiness and quality of life of Service members and Veterans with auditory system injuries. The mission of the program is to</p>		9.666	5.000

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	
advance the science of hearing restoration by delivering groundbreaking research and solutions that remove barriers to successful treatment of auditory system injury. FY 2023 Plans: This Congressional Special Interest initiative provided funds to pursue promising, necessary research for treatment of burdensome and very prevalent auditory system injury. The vision of the Hearing Restoration Research Program is to improve the operational effectiveness, medical readiness and quality of life of Service members and Veterans with auditory system injuries. The mission of the program is to advance the science of hearing restoration by delivering groundbreaking research and solutions that remove barriers to successful treatment of auditory system injury.			
Congressional Add: 502 - CSI - Peer-Reviewed Kidney Cancer Research (Army) FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for research into kidney cancer. The vision of the Kidney Cancer Research Program is to eliminate kidney cancer. FY 2023 Plans: This Congressional Special Interest initiative provided funds for research into kidney cancer. The vision of the Kidney Cancer Research Program is to eliminate kidney cancer.	48.331	50.000	
Congressional Add: 503 - CSI - Peer-Reviewed Lupus Research (Army) FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for research into lupus. The vision of the Lupus Research Program is to cure lupus through partnership of scientists, clinicians, and consumers. FY 2023 Plans: This Congressional Special Interest initiative provided funds for research into lupus. The vision of the Lupus Research Program is to cure lupus through partnership of scientists, clinicians, and consumers.	9.666	10.000	
Congressional Add: 540A - Global HIV/AIDS Prevention (Navy) FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for research for Global HIV/AIDS Prevention. The program is responsible for assisting foreign military partners with the development and implementation of culturally focused, military-specific HIV/AIDS prevention, care, and treatment programs in more than 55 countries around the globe. FY 2023 Plans: This Congressional Special Interest initiative provided funds for research for Global HIV/AIDS Prevention. The program is responsible for assisting foreign military partners with the development and implementation of culturally focused, military-specific HIV/AIDS prevention, care, and treatment programs in more than 55 countries around the globe.	10.000	12.000	
Congressional Add: 660A - Tuberos Sclerosis Complex (TSC)	7.733	8.000	

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023
<p><i>FY 2022 Accomplishments:</i> This Congressional Special Interest initiative provided funds for Tuberous Sclerosis Complex (TSC) research. The Tuberous Sclerosis Complex Research Program (TSCRCP) sought to support innovative research to improve the lives of individuals with TSC through understanding the pathogenesis and manifestations of TSC and developing improved diagnostic and treatment approaches.</p> <p><i>FY 2023 Plans:</i> This Congressional Special Interest initiative provided funds for Tuberous Sclerosis Complex (TSC) research. The Tuberous Sclerosis Complex Research Program (TSCRCP) sought to support innovative research to improve the lives of individuals with TSC through understanding the pathogenesis and manifestations of TSC and developing improved diagnostic and treatment approaches.</p>		
<p><i>Congressional Add:</i> 790A - Peer-Reviewed Duchenne Muscular Dystrophy</p> <p><i>FY 2022 Accomplishments:</i> This Congressional Special Interest initiative provided funds for Duchenne Muscular Dystrophy (DMD) research. DMD is caused by gene mutations in skeletal muscle proteins, and affects approximately 1 in 3,600 boys causing muscle degeneration and eventual death.</p> <p><i>FY 2023 Plans:</i> This Congressional Special Interest initiative provided funds for Duchenne Muscular Dystrophy (DMD) research. DMD is caused by gene mutations in skeletal muscle proteins, and affects approximately 1 in 3,600 boys causing muscle degeneration and eventual death.</p>	9.666	10.000
<p><i>Congressional Add:</i> 512 - Peer-Reviewed Melanoma Research</p> <p><i>FY 2022 Accomplishments:</i> This Congressional Special Interest initiative provided funds for Peer-Reviewed Melanoma Research. The program is responsible for innovative research that will impact the prevention, diagnosis, staging, and treatment of melanoma in the near and intermediate future.</p> <p><i>FY 2023 Plans:</i> This Congressional Special Interest initiative provided funds for Peer-Reviewed Melanoma Research. The program is responsible for innovative research that will impact the prevention, diagnosis, staging, and treatment of melanoma in the near and intermediate future.</p>	38.665	40.000
<p><i>Congressional Add:</i> 513 - Chronic Pain Management</p> <p><i>FY 2022 Accomplishments:</i> This Congressional Special Interest initiative provided funds for Chronic Pain Management. The program is responsible to develop new approaches to alleviate Veterans' pain, which may result from spinal cord injury, burns, amputations, traumatic brain injury, cancer, or musculoskeletal conditions. The program explores ways to decrease medical and behavioral harms related to opioid use and misuse,</p>	14.499	15.000

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023
<p>improve access to effective complementary approaches to pain care, and help treatment options to address pain and improve function, among other areas.</p> <p>FY 2023 Plans: This Congressional Special Interest initiative provided funds for Chronic Pain Management. The program is responsible to develop new approaches to alleviate Veterans' pain, which may result from spinal cord injury, burns, amputations, traumatic brain injury, cancer, or musculoskeletal conditions. The program explores ways to decrease medical and behavioral harms related to opioid use and misuse, improve access to effective complementary approaches to pain care, and help treatment options to address pain and improve function, among other areas.</p>		
<p>Congressional Add: 514 - Combat Readiness Medical Research</p> <p>FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for Combat Readiness Medical Research. This program focuses on research relating to forward-deployable solutions that can promptly address life threatening injuries and medical diagnostics, threats, and treatments, and medical threats and treatments for Service members in battlefield settings.</p> <p>FY 2023 Plans: This Congressional Special Interest initiative provided funds for Combat Readiness Medical Research. This program focuses on research relating to forward-deployable solutions that can promptly address life threatening injuries and medical diagnostics, threats, and treatments, and medical threats and treatments for Service members in battlefield settings.</p>	9.666	5.000
<p>Congressional Add: 515 - Peer-Reviewed Pancreatic Cancer Research</p> <p>FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for Peer-Reviewed Pancreatic Cancer Research. The program support research on the prevention, detection, diagnosis, and treatment of pancreatic cancer.</p> <p>FY 2023 Plans: This Congressional Special Interest initiative provided funds for Peer-Reviewed Pancreatic Cancer Research. The program support research on the prevention, detection, diagnosis, and treatment of pancreatic cancer.</p>	14.499	15.000
<p>Congressional Add: 516 - Peer-Reviewed Rare Cancers Research</p>	16.916	17.500

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 300A / <i>Congressional Special Interests</i>
B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023
FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for Peer-Reviewed Rare Cancers Research. The program support research on the prevention, detection, diagnosis, and treatment of rare cancer.		
FY 2023 Plans: This Congressional Special Interest initiative provided funds for Peer-Reviewed Rare Cancers Research. The program support research on the prevention, detection, diagnosis, and treatment of rare cancer.		
Congressional Add: 518 - Peer-Reviewed Toxic Exposures Research	28.999	30.000
FY 2022 Accomplishments: This Congressional Special Interest initiative provided funds for Peer-Reviewed Toxic Exposures Research.		
FY 2023 Plans: This Congressional Special Interest initiative provided funds for Peer-Reviewed Toxic Exposures Research.		
Congressional Add: 522 - Program Increase - USUHS military surgical teams simulation technology	4.836	-
FY 2022 Accomplishments: CSI-Enacted Prog Increase		
Congressional Add: 523 - Program Increase - USUHS multi-domain operations	33.799	30.000
FY 2022 Accomplishments: CSI-Enacted Prog Increase		
FY 2023 Plans: CSI-Enacted Prog Increase		
Congressional Add: 300A - Congressional Add - Brain injury and disease prevention research	57.941	65.000
FY 2022 Accomplishments: FY22 Congressional Add		
FY 2023 Plans: FY23 Congressional Add		
Congressional Add: 300A - Congressional Add - Clinical research	9.659	30.000
FY 2022 Accomplishments: FY22 Congressional Add		
FY 2023 Plans: FY23 Congressional Add		
Congressional Add: 300A - Congressional Add - Optimizing military health and performance	-	7.000
FY 2023 Plans: FY23 Congressional Add		
Congressional Add: 300A - Congressional Add - Vector borne health protection	-	5.000

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 300A / <i>CSI - Congressional Special Interests</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023
FY 2023 Plans: FY23 Congressional Add		
Congressional Add: 300A - Congressional Add - Individual occupational and environmental exposure monitoring	-	10.000
FY 2023 Plans: FY23 Congressional Add		
Congressional Add: 300A - Congressional Add - Telemedicine and advanced technology research center	-	2.000
FY 2023 Plans: FY23 Congressional Add		
Congressional Add: 300A - Congressional Add - Syndromic surveillance for emerging biothreats	-	4.500
FY 2023 Plans: FY23 Congressional Add		
Congressional Add: 300A - Congressional Add - Human performance optimization	-	10.000
FY 2023 Plans: FY23 Congressional Add		
Congressional Add: 300A - Congressional Add - Global noncommunicable disease interventions	-	10.000
FY 2023 Plans: FY23 Congressional Add		
Congressional Add: 300A - Congressional Add - Special operations TBI pilot program	-	4.000
FY 2023 Plans: FY23 Congressional Add		
Congressional Add: 300A - Congressional Add - Military-civilian trauma partnerships	-	5.000
FY 2023 Plans: FY23 Congressional Add		
Congressional Add: 300A - Congressional Add - Non-direction blast sensors	-	2.000
FY 2023 Plans: FY23 Congressional Add		
Congressional Add: 300A - Congressional Add - Wound management technology development	-	25.000
FY 2023 Plans: FY23 Congressional Add		
Congressional Add: 300A - Congressional Add - National Intrepid Center of Excellence creative arts therapy	-	10.000
FY 2023 Plans: FY23 Congressional Add		
Congressional Add: Peer-reviewed military burn research	-	10.000
FY 2023 Plans: FY23 Congressional Add		
Congressional Add: Peer-reviewed Neurofibromatosis research	-	25.000

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency	Date: March 2023
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Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 300A / <i>CSI - Congressional Special Interests</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023
<i>FY 2023 Plans:</i> FY23 Congressional Add		
<i>Congressional Add:</i> Peer-reviewed Parkinson's research	-	16.000
<i>FY 2023 Plans:</i> FY23 Congressional Add		
Congressional Adds Subtotals	1,787.181	1,986.880

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

Research proposals will be solicited by program announcements resulting in grants, contracts, or other transactions.

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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 0603115DHA / <i>Medical Technology Development</i>				Project (Number/Name) 238C / <i>Air & Space Austere Environment Patient Care and Transport (AF)</i>			
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
238C: <i>Air & Space Austere Environment Patient Care and Transport (AF)</i>	27.575	12.212	12.866	13.122	0.000	13.122	13.386	13.654	13.928	14.207	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project advances combat casualty care in the air through biomedical research into interventional strategies and technologies that mitigate the risks for additional insult due to aeromedical evacuation. It transitions promising Science and Technology (S&T) from PE 0602115DHA's Project Code 306D - Advanced Diagnostics & Therapeutics Research & Development - Medical and Operational Biosciences (AF), and civilian groups into knowledge and materiel products that promote the recovery and return to duty of injured or ill service members, from point of injury back to definitive care. This project aligns to the Air Force Medical Service (AFMS) Medical Modernization Priorities to support Aeromedical Evacuation and En Route Care (AE/ERC). Research within this program includes but is not limited to: ground medical operations in agile combat employment, autonomous care of patient movement, and optimization of patient movement.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Air & Space Austere Environment Patient Care and Transport (AF)	12.212	12.866	13.122	0.000	13.122
Description: Advanced research and development to model, improve and optimize enroute care systems in multi-domain operations. Efforts include S&T to provide autonomous patient care, telemedicine and decision-assist algorithms, impact of transport on patient pathophysiology, and optimization of care provider performance and stabilization / resuscitation strategies to improve service member survival and return to duty. Research will focus on data, artificial intelligence (AI) / machine learning (ML), robotics, software/hardware design, emerging technologies, optimizing critical AE/ERC teams through training, team dynamics, communication, countering skill decline and modeling, and enhancing ground operational medical capabilities to ensure Airmen and Guardians maintain survivability and resiliency in austere, degraded, and damaged locations.					
FY 2023 Plans: Understanding the effects of multiple flights following impact and blast-induced traumatic brain injury on long-term outcomes, automated decision support, telemedicine, telementoring, telemonitoring (TM3) and advancing technologies for autonomous patient care and decision-assist. Operationally define levels of autonomy of care solutions for AE/ERC and identify technologies for evaluation in simulated environment. Use modeling and simulation tools to build digital models of equipment and examine patient throughput and personnel requirements. Investigate expected operational triage and equipment requirements, expected injury patterns, and physiological impact of prolonged care for near-peer threat scenarios. Investigate technology and knowledge solutions for expanding EMEDS to a ground medical agile combat employment execution team to					

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 238C / <i>Air & Space Austere Environment Patient Care and Transport (AF)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
include effects of arctic conditions on functionality and protection for medications, equipment, and facilities in allowance standard and enhancing blood products in agile combat employment environments. FY 2024 Base Plans: Evaluate potential autonomous care solutions in simulated environment and deliver modeling and simulation tool for further research. Develop models for AE mission set. Evaluate rapid thawing/warming technologies and blood product solutions in extreme environments. Investigate decision support/decision assist tools to returned injured to duty, resolve injury in less time, and increase capability to hold a patient with very little monitoring required. FY 2024 OCO Plans: N/A FY 2023 to FY 2024 Increase/Decrease Statement: Increase is due to inflation.					
Accomplishments/Planned Programs Subtotals	12.212	12.866	13.122	0.000	13.122

C. Other Program Funding Summary (\$ in Millions)											
Line Item	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
• BA-1, PE 0807714HP: <i>Other Consolidated Health Support</i>	-	-	-	-	-	-	-	-	-	-	

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.

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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 0603115DHA / Medical Technology Development				Project (Number/Name) 284B / Air & Space Physiology, Medicine and Human Performance (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
284B: Air & Space Physiology, Medicine and Human Performance (AF)	23.351	10.716	11.471	11.700	0.000	11.700	11.933	12.173	12.416	12.663	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project enables, sustains, and optimizes performance of Airmen through the elevation and alleviation of health effects associated with Air Force (AF) operational missions. This work addresses operational environments such as the mitigation of stress in AF personnel, to include aircrew, care providers, aircraft maintainers, intelligence, surveillance and cyber operators, as well as remote piloted aircraft operators. It transitions promising Science and Technology (S&T) from PE 0602115DHA's Project Code 306D - Advanced Diagnostics & Therapeutics Research & Development - Medical and Operational Biosciences (AF), and civilian groups into knowledge and materiel products to sustain, and enhance Airman and Guardian health and performance in operational environments. Research within this project includes but is not limited to: airman performance and readiness, advancing air and space medicine, and medical operator performance digital engineering.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Air & Space Physiology, Medicine and Human Performance (AF)	10.716	11.471	11.700	0.000	11.700
Description: Advanced technology development to enable, sustain, and optimize cognitive, behavior and physiologic performance in high-priority career fields for the United States Air Force (USAF) and in multi-domain operations. The sub-project areas include cognitive and physiologic performance under operational and environmental stressors, detection and improvement of physiological performance, and safety via sensor systems and targeted conditioning, which includes training techniques for optimal performance. This project also develops and demonstrates technologies which ingest health status monitoring data to provide scalable situational awareness of individual, unit, and group medical readiness in support of command and control and develops strategies to mitigate performance limitations through physical, pharmacological/non-pharmacological, or behavioral medical interventions and/or technological augmentation.					
FY 2023 Plans: To provide evidence-based test battery for physical attributes associated with G-performance, Fighter Aircrew Conditioning Program (FACP) update recommendations, updated cognitive models associated with performance in DCGS environments, modernized vision screening methodologies, and characterization of the additive effects of the pilot flight ensemble and associated changes in the human response. Advanced aeromedical digital engineering to enable human factors to be incorporated into model-based safety assessments for acute injury. Vision knowledge products to revise medical standards. Optimization of Human Capital performance model to					

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 284B / <i>Air & Space Physiology, Medicine and Human Performance (AF)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>inform/re-evaluate medical selection and readiness criteria. Apply mission modeling methods to calculate human performance impact using digital modeling and simulation.</p> <p>FY 2024 Base Plans: Leverage knowledge gained from Budget Activity 6.2 ready medical solutions research to investigate medical equipment and patient transport for air and space environments. Support aircrew conditioning program research, investigate airworthiness certification criteria for neck injury and aircrew qualification standards. Enhanced health hazard risk assessment tool for spinal injury risk of aircrew systems. Model validation and incorporation with airworthiness assessment standards. Enhance readiness of medical personnel to perform in cold region environments by investigating low/zero/reduced SWaP equipment and material solutions. Complete commercial Automated Vision Tester (AVT). Deliver medical modeling capabilities to wargaming models to inform medical impact on the battlefield.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase is due to inflation.</p>					
Accomplishments/Planned Programs Subtotals	10.716	11.471	11.700	0.000	11.700

<p>C. Other Program Funding Summary (\$ in Millions) N/A</p> <p>Remarks</p> <p>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.</p>
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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 0603115DHA / Medical Technology Development	Project (Number/Name) 285A / Operational Medicine Research & Development (Budgeted) (AF)
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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
285A: Operational Medicine Research & Development (Budgeted) (AF)	9.828	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

The Operational Medicine project develops validated solutions for the delivery of preventative care, intervention and treatment to Active Duty members and DoD beneficiaries. The primary focus areas include physiological and psychological health. Sub-topics include resilience, personalized medicine, patient safety, and care coordination.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Operational Medicine Research & Development (Budgeted) (AF)	0.000	0.000	0.000	0.000	0.000
Description: Basic research initiatives are developed and translated into practice; advanced technology initiatives are focused on prevention and treatment of chronic disease such as obesity and diabetes.					
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

D. Acquisition Strategy

N/A

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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 0603115DHA / Medical Technology Development				Project (Number/Name) 307B / Air & Space Force Health Protection (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
307B: Air & Space Force Health Protection (AF)	26.893	11.044	11.630	11.862	0.000	11.862	12.099	12.341	12.587	12.840	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project delivers improved capabilities across the full spectrum of Air Force (AF) operations in the areas of directed energy and occupational and environmental health. Research involves the assessment and implementation of innovative technologies that enable effective surveillance, detection, identification, and mitigation of hazardous chemical, biological, directed energy, and other radiological and physical hazards that present a health risk to our Airmen and Guardians and threaten to degrade and disrupt operational readiness. The intent is to warn and protect AF operators, such as our high performance and high-altitude aircrews facing extreme environments. It transitions promising Science and Technology (S&T) from PE 0602115DHA's Project Code 306D - Advanced Diagnostics & Therapeutics Research & Development - Medical and Operational Biosciences (AF), and civilian groups into knowledge and materiel products to inform risk-based decisions, enable policy decisions, and provide modern software and technology to enable the Force Health Protection mission in the future fight. Research within this project encompasses understanding, protecting against, and mitigating hazards to the warfighter health to include chemical, biological, radiation, nuclear or extremes of environment. Research within this project includes but is not limited to: force health protection in agile combat employment, emerging hazards, and infection control in patient movement.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Air & Space Force Health Protection (AF)	11.044	11.630	11.862	0.000	11.862
Description: Advanced research to develop and model exposures within the realms of Airman occupation, expeditionary medicine, medical countermeasures of directed energy, aircrew health, and CBRNE environments as it relates to health readiness. This project area seeks to deliver improved capabilities across the full spectrum of Air Force operations to enable force health protection. Tools to enable preventative medicine and health protection during agile combat employment operations. Deliver enhanced capability to rapidly assess and predict the impact of emerging hazards and threats in the operational environment. Ensure maximum readiness of personnel and aircrafts to enable effective patient movement across the spectrum of operational challenges expected in the future fight. Research will include but is not limited to: operational insights exploration to map scenarios of preventative medicine operations in agile combat employment, sensors development/testing/evaluation, data connectivity and networking, decision guidance tools for field use, and extreme environment solutions.					
FY 2023 Plans: To field exposure sensor flow process screening through human health machine learning algorithms for: realtime performance predictions, integrate high throughput toxico kinetics framework, understand limits of detection in					

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 307B / <i>Air & Space Force Health Protection (AF)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
operational environment. Map scenarios of preventative medicine operations in agile combat employment to understand challenges including operational input and feedback. Investigate passive sampling badges to help assess chemical exposures in far forward agile combat employment operations and wireless connectivity of sensors. Deliver real-time awareness app which integrates data from range of environmental hazard sensors. Risk assessment workflows for inhaled hazards. Conduct airflow model testing. <i>FY 2024 Base Plans:</i> Develop agile combat employment enabling technologies toolkit. Investigate flexible network deployment. Deliver ToxAdvisor which will provide rapid toxicological assessment for chemical exposures to Airmen in deployed environments via a stand-alone handheld tool. Rapid prediction of hazard impact using validated computer based models, established in-vitro screening and structured workflows. Identify infection control technologies, methods, processes and strategies to mitigate infection spread and decontaminate assets. <i>FY 2024 OCO Plans:</i> N/A <i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Increase due to inflation.					
Accomplishments/Planned Programs Subtotals	11.044	11.630	11.862	0.000	11.862

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.

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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 0603115DHA / Medical Technology Development	Project (Number/Name) 308B / Expeditionary Medicine Research & Development (Budgeted) (AF)
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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
308B: Expeditionary Medicine Research & Development (Budgeted) (AF)	12.241	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 area identifies innovative techniques and technologies that can be employed by Air Force medics during prolonged field care operations. It includes technology to improve survivability and advance “zero-preventable deaths”. Sub-project areas include the development and validation of novel procedures, materials, techniques, and tools associated with expeditionary operations.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Expeditionary Medicine Research & Development (Budgeted) (AF)	0.000	0.000	0.000	0.000	0.000
Description: This project provides advanced technology development to improve regenerative medicine and stabilization in prolonged field care operations. Efforts will include enhanced clinical guidelines and concept technology for treatment of non-compressible torso hemorrhage, development and application of portable ventilation monitoring, and development of new life and limb salvage technologies.					
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

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 308B / <i>Expeditionary Medicine Research & Development (Budgeted) (AF)</i>

D. Acquisition Strategy
N/A

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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 0603115DHA / Medical Technology Development				Project (Number/Name) 309A / Regenerative Medicine (USUHS)			
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
309A: Regenerative Medicine (USUHS)	28.665	10.271	10.833	11.051	0.000	11.051	11.271	11.496	11.724	11.958	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Military Traumatic Brain Injury Initiative (MTBI2) formerly known as Center for Neuroscience and Regenerative Medicine (CNRM) brings together the expertise of clinicians and scientists across disciplines to catalyze innovative approaches to traumatic brain injury (TBI) research and produce impactful knowledge products. MTBI2 (CNRM) Research Programs emphasize aspects of high relevance to military populations, with a primary focus on patients at the Walter Reed National Military Medical Center and military treatment facilities across the United States.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Military Traumatic Brain Injury Initiative (MTBI2) Formerly Center for Neuroscience and Regenerative Medicine (USUHS)	10.271	10.833	11.051	0.000	11.051
Description: The Military Traumatic Brain Injury Initiative (MTBI2) formerly the Center for Neuroscience and Regenerative Medicine (CNRM) is an interdisciplinary research group focused on military-relevant traumatic brain injury (TBI). MTBI2 (formerly CNRM) involves the Uniformed Services University (USU), the Walter Reed National Military Medical Center (WRNMMC), the National Institutes of Health (NIH), and multiple collaborators. MTBI2 (formerly CNRM) includes over 30 senior scientific investigators, 80 skilled staff members, and active research at greater than 10 locations in the Washington D.C. area and throughout the United States.					
FY 2023 Plans:					
(1) Design and execute rigorous clinical trials of candidate therapeutics with potential for direct benefit to military service members with acute TBI. There are 7 randomized controlled trials ongoing or in late-stage development, and several more in the planning stages. All trials involve U.S. military service members with readiness-relevant health concerns related to TBI, such as post-traumatic headaches, sleep disorders, and mood dysregulation. This objective involves building and maintaining a network of site collaborators and staff at multiple military treatment facilities around the U.S. that can efficiently execute trials in acute traumatic brain injury.					
(2) Design and execute rigorous clinical trials designed to improve neurologic outcomes and return warfighters with severe traumatic brain injury to optimal health. This involves establishing a Neurological Intensive Care Unit at San Antonio Military Medical Center that lays the groundwork for a collaborative network of Neurological Intensive Care Units that can complete Phase 1 and Phase II clinical trials in severe traumatic brain injury. This is in direct alignment with objective 4bi (Identify, develop, and deploy evidence-based treatment and					

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 309A / <i>Regenerative Medicine (USUHS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>rehabilitation strategies for TBIs that will return warfighters to optimal health) of the Department of Defense Warfighter Brain Health Initiative.</p> <p>(3) Execute a major observational study on the effects of repeated sub-concussive blast exposures sustained during military heavy weapons training. This ongoing study involves objective assessments of Navy SEALs, range safety officers, and unexposed controls at multiple time points to assess baseline, acute, subacute and chronic effects.</p> <p>(4) Execute rigorous clinical practice guidelines based in the best evidence and world-wide expert opinion to improve the care of patients with all severities of traumatic brain injury. This involves solidifying partnerships with world leaders in neurotrauma and guideline development to produce guidelines applicable to civilians and military scenarios. This is in direct alignment with objective 5d (Translate Research Findings into knowledge and material products, practices and policies to maintain and optimize Warrior Brain Health.</p> <p>(5) Test 2 novel handheld devices designed for prolonged field care use by military pre-hospital providers. These include a) an ultralight intracranial hemorrhage detector that uses advanced infrared technology to localize life-threatening subdural and epidural hematomas without the need for a Computed tomography (CT) scanner; b) a fully self-contained tight seal burr hold device that will allow emergency treatment of life-threatening subdural and epidural hematomas in an austere environment by prehospital providers. These devices will be tested in a sheep model of subdural hematoma in collaboration with the Walter Reed Army Institute for Research (WRAIR) and the Johns Hopkins Applied Physics Lab.</p> <p>(6) Train future military TBI research leaders through a post-doctoral fellowship program in collaboration with the University of Maryland, direct mentoring of military researchers around the country, a bimonthly seminar series, and multiple other educational events.</p> <p>(7) Perform discovery research that lays a foundation for future clinical trials, including a) use of a military relevant TBI animal models involving combined repetitive blasts, plus impact, plus chronic stress to test candidate therapeutics, b) discovery of new imaging methods to detect blast-related brain injury, which at present can only be assessed post-mortem, c) development and validation of blood, sweat and pupillary-based biomarkers for objective assessment of TBI.</p> <p>(8) Provide efficient, high quality support services for MTBI2 (formerly CNRM) researchers and collaborators: a) the clinical trials unit, including protocol development, regulatory, and monitoring services; b) informatics, including secure clinical data capture, robust data storage, and rigorous statistical analysis; c) biofluid core, including robust storage, distribution of samples to collaborators, and analyses, including high sensitivity biomarker studies in sweat, saliva and blood; d) program management, including personnel, financial, logistics, safety, and compliance activities.</p>					

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 309A / <i>Regenerative Medicine (USUHS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
(9) Continuously communicate with stakeholders to refine focus areas, funding priorities, and collaborative opportunities. (10) Focus on improving diversity, equity and inclusion through a series of workshops, readings, and team activities. (11) Disseminate findings of MTBI2 (formerly CNRM) research to military, medical, scientific, and lay communities via in-person events, social media, electronic communications, and peer reviewed publications. (12) Expand MTBI2 (formerly CNRM) funding via external sources to support additional clinical trials, blast exposure studies, prolonged field care activities, and discovery research with a goal of doubling our current total funding by 2030. (13) Define focus areas of next research stage and best funding format for those directions, optimize research teams to support new research projects pending availability of FY23 funding. FY 2024 Base Plans: FY 2024 plans continue efforts as outlined in FY 2023. FY 2024 OCO Plans: N/A FY 2023 to FY 2024 Increase/Decrease Statement: Price adjustment for inflation.					
Accomplishments/Planned Programs Subtotals	10.271	10.833	11.051	0.000	11.051

C. Other Program Funding Summary (\$ in Millions)											
Line Item	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
• BA-1, 0806721HP: <i>Uniformed Services University of the Health Sciences</i>	10.236	-	-	-	-	-	-	-	-	-	Continuing Continuing

Remarks
 Infrastructure to support the MTBI2 (formerly CNRM) program; and salaries of neuroscience faculty and technical and administrative support personnel.

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.

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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 0603115DHA / Medical Technology Development				Project (Number/Name) 373 / GDF - Medical Technology Development			
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
373: GDF - Medical Technology Development	207.753	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 - Medical Technology Development provides funds for development of promising candidate solutions that are selected for initial safety and effectiveness testing in animal studies and/or small-scale human clinical trials regulated by the US Food and Drug Administration prior to licensing for human use. Medical technology development is managed by Joint Program Committees in the following areas: 1- Military Infectious Diseases research is developing protection and treatment capabilities for military relevant emerging infectious diseases and wound infections. 2- Military Operational Medicine research goals are to develop and validate medical countermeasures against operational stressors, prevent physical and psychological injuries during training and operations, and to maximize health, performance and readiness of Service members. 3- Combat Casualty Care research is optimizing survival and recovery in injured Service members across the spectrum of care from point of injury through en route and facilities care.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: GDF – Medical Technology Development	0.000	0.000	0.000	0.000	0.000
Description: Funds provide for the development of medical technology candidate solutions and components of early prototype systems for test and evaluation. Promising drug and vaccine candidates, knowledge products, and medical devices and technologies are selected for initial safety and effectiveness testing in small scale human clinical trials.					
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

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 373 / <i>GDF - Medical Technology Development</i>

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

Mature and demonstrate safety and effectiveness of medical procedures, medical devices, and drug and vaccine candidates intended to prevent or minimize effects from battlefield injuries, diseases, and extreme or hazardous environments. Milestone B packages will be developed to transition products into advanced development.

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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 0603115DHA / Medical Technology Development	Project (Number/Name) 373A / GDF - MTD (Combat Casualty Care)
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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
373A: GDF - MTD (Combat Casualty Care)	11.168	15.357	24.519	26.943	0.000	26.943	27.950	28.871	29.810	30.406	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project supports Medical Technology Development (combat casualty care) efforts with the goal of optimizing Warfighter survival and recovery from combat-related injury in current and future operational scenarios for the acute and early management of combat-related trauma, including point of injury, en route, and facility-based care.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Combat Casualty Care	15.357	24.519	26.943	0.000	26.943
Description: Combat Casualty Care medical technology development activities seek to drive medical innovation through development of knowledge and materiel solutions for the management of combat-related trauma.					
FY 2023 Plans: Combat Casualty Care medical technology development will continue to focus on developing and transitioning emerging technologies to enable care in the areas of prolonged care, pre-hospital tactical combat casualty care, battlefield traumatic brain injury/neurotrauma, burn injury, and en route care.					
FY 2024 Base Plans: Efforts will continue to focus on combat casualty care medical technology development related to developing and transitioning emerging technologies to enable care in the areas of prolonged care, pre-hospital tactical combat casualty care, battlefield traumatic brain injury/neurotrauma, burn injury, and en route care.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: Increase supports combat casualty care technology development to enable combined injury care during joint all domain operations.					
Accomplishments/Planned Programs Subtotals	15.357	24.519	26.943	0.000	26.943

C. Other Program Funding Summary (\$ in Millions)

N/A

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 373A / <i>GDF - MTD (Combat Casualty Care)</i>

C. Other Program Funding Summary (\$ in Millions)

Remarks

N/A

D. Acquisition Strategy

N/A

UNCLASSIFIED

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 0603115DHA / Medical Technology Development	Project (Number/Name) 373B / GDF - MTD (Military Operational Medicine)
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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
373B: GDF - MTD (Military Operational Medicine)	23.255	23.588	34.150	22.426	0.000	22.426	23.152	23.815	24.492	25.182	Continuing	Continuing

Note
DHA internally realigned \$10M per year (\$50M over FYDP) from Project 373B to Project 478 in support of the Murtha Cancer Center (APOLLO Project).

A. Mission Description and Budget Item Justification

This project supports medical technology development efforts 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.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Military Operational Medicine	23.588	34.150	22.426	0.000	22.426
Description: Military Operational Medicine medical technology and development efforts focus on the following areas: musculoskeletal injury prevention and treatment; blunt, blast, accelerative, and neurosensory injury prevention & readiness; psychological health and resilience; performance in extreme environments; and optimized cognition and fatigue mitigation.					
FY 2023 Plans: Efforts will focus on military operational medicine medical advanced technology development related to neuromusculoskeletal injury prevention and treatment; optimized performance & sustained medical readiness; performance & health in extreme environments; and psychological health prevention & treatment.					
FY 2024 Base Plans: Efforts will continue to focus on military operational medicine medical advanced technology development related to neuromusculoskeletal injury prevention and treatment; optimized performance & sustained medical readiness; performance & health in extreme environments; and psychological health prevention & treatment.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement:					

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 373B / <i>GDF - MTD (Military Operational Medicine)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Decrease reflects planned technology maturation related to neuromusculoskeletal injury prevention and treatment research.					
Accomplishments/Planned Programs Subtotals	23.588	34.150	22.426	0.000	22.426

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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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 0603115DHA / Medical Technology Development			Project (Number/Name) 373C / GDF - MTD (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
373C: GDF - MTD (Medical Simulation & Training/Health Informatics)	12.613	12.729	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 proof of technological feasibility studies and experiments and/or assessment of operability and producibility to address a military medical need identified through the Joint Capabilities Integration and Development System. Efforts are directed towards prototypes for field experiments and/or tests in a simulated environment, assessment/proof of feasibility or demonstration of utility/cost reduction 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
<p>Title: Medical Simulation Technologies (Formerly Medical Simulation Technologies & Training/Health Informatics)</p> <p>Description: Studies, investigations, and non-system specific technology effort focus on prototyping 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.</p> <p>FY 2023 Plans: N/A</p> <p>FY 2024 Base Plans: N/A</p> <p>FY 2024 OCO Plans:</p>	12.729	0.000	0.000	0.000	0.000

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 373C / <i>GDF - MTD (Medical Simulation & Training/Health Informatics)</i>				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: N/A						
Accomplishments/Planned Programs Subtotals		12.729	0.000	0.000	0.000	0.000
C. Other Program Funding Summary (\$ in Millions) N/A						
Remarks						
D. Acquisition Strategy N/A						

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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 0603115DHA / Medical Technology Development	Project (Number/Name) 373D / GDF - MTD (Clinical and Rehabilitation Medicine)
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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
373D: GDF - MTD (Clinical and Rehabilitation Medicine)	13.040	14.619	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 continue to develop knowledge and materiel products to reconstruct, rehabilitate, and provide care for injured Service member 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	14.619	0.000	0.000	0.000	0.000
Description: Clinical and rehabilitation medicine efforts will continue to support clinical trials in neuromusculoskeletal injuries to provide products and information solutions for diagnosis, treatment, and rehabilitation outcomes for Service-related injuries. Develop solutions (knowledge and materiel) for the diagnosis and alleviation of pain, restoration or regeneration of neuromusculoskeletal tissues, and sensory system (ocular) rehabilitation and treatment.					
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	14.619	0.000	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 373D / <i>GDF - MTD (Clinical and Rehabilitation Medicine)</i>

D. Acquisition Strategy
N/A

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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 0603115DHA / Medical Technology Development	Project (Number/Name) 373E / GDF - MTD (Military Infectious Disease)
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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
373E: GDF - MTD (Military Infectious Disease)	6.409	6.470	12.886	13.817	0.000	13.817	13.747	13.659	13.570	13.841	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project supports medical technology development efforts toward the goal of preventing and treating infectious disease threats to eliminate their impacts on operational readiness.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Military Infectious Disease	6.470	12.886	13.817	0.000	13.817
Description: Military infectious disease activities to support efforts (including clinical) to develop innovative therapeutics and delivery technologies for combat wound infections. These efforts include accelerating promising prevention and treatment solutions to emerging infectious diseases (e.g., Dengue, chikungunya, Coronaviruses).					
FY 2023 Plans: Will continue to test lead drug candidates in healthy volunteers to determine drug pharmacology, safety, and effectiveness against emerging infectious diseases (EID). Will continue to support wound infections prevention and treatments research.					
FY 2024 Base Plans: Efforts will continue to focus on Medical Advanced Technology development related to testing lead drug candidates to determine drug pharmacology, safety, and effectiveness against emerging infectious diseases (EID). Will continue to support wound infections prevention and treatments research.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: Increase supports technology maturation in the area of wound infection prevention and treatments research.					
Accomplishments/Planned Programs Subtotals	6.470	12.886	13.817	0.000	13.817

C. Other Program Funding Summary (\$ in Millions)

N/A

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 373E / <i>GDF - MTD (Military Infectious Disease)</i>

C. Other Program Funding Summary (\$ in Millions)

Remarks

D. Acquisition Strategy

N/A

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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 0603115DHA / Medical Technology Development	Project (Number/Name) 373F / GDF - MTD (Radiological Health Effects)
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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
373F: GDF - MTD (Radiological Health Effects)	0.501	0.523	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 medical technology development efforts 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	0.523	0.000	0.000	0.000	0.000
Description: Develop in vivo models, assays, and other enabling technologies to support transition of candidate MCM(s) and to reduce risk during advanced development. This efforts will include the identification and characterization of biomarkers to establish novel druggable targets, understanding differences in species sensitivity to radiation, evaluating direct and indirect mechanisms of actions of high and low linear energy transfer (LET) radiation sources (e.g., neutrons, gamma), and, determining radiosensitivity and radioresistance of various systems/organs.					
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	0.523	0.000	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 373F / <i>GDF - MTD (Radiological Health Effects)</i>

D. Acquisition Strategy
N/A

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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 0603115DHA / Medical Technology Development			Project (Number/Name) 373G / GDF - MTD (Military Medical Photonics)				
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
373G: GDF - MTD (Military Medical Photonics)	10.000	9.953	10.404	10.612	0.000	10.612	10.824	11.040	11.261	11.486	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project supports Military Medical Photonics 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 acute and early management of combat-related trauma, including point of injury, en route, and facility-based care.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Title: Military Medical Photonics</p> <p>Description: The Military Medical Photonics Program is an interdisciplinary program of physical and biological scientists, engineers, and physicians addressing diagnostic and therapeutic needs to support combat casualty care. Activities will continue to focus on diagnostic, imaging, and therapeutic studies. Specific efforts include: Photochemical tissue bonding for wound repair, passivation, and vein stiffening for abnormal connections between an artery and a vein; Optical applications for treatment and prevention of wound contamination and scarring, and to support wound healing and cartilage regeneration; Photonics-based diagnostics, including early detection of airway inhalation injury and implantable biomarker sensors; Investigations of photonics technologies to support the prolonged shelf life of human platelets; and Photobiomodulation to affect cognitive function.</p> <p>FY 2023 Plans: Will continue research toward the development of diagnostic, assessment and therapeutic solutions to optimize medical care of the Warfighter in current and future battlefield. Materiel and knowledge solutions will focus on innovative capabilities for use in the far forward environment that will cognitively and physically off load the medics in Large Scale Combat operations (LSCO). Focus areas will be cutting edge diagnostics that are of low cube and weight and can be used by minimally trained Warfighters at the point of injury, miniature and rugged imaging capabilities, and novel therapeutics for wound repair, vascular rupture diagnosis and repair. Photonics-based diagnostics will be integrated across the continuum of care, including early detection of airway inhalation injury and implantable biomarker sensors and Photobiomodulation to affect cognitive function.</p> <p>FY 2024 Base Plans: Efforts will continue to focus on Medical Advanced Technology development related to development of diagnostic, assessment and therapeutic solutions to optimize medical care of the Warfighter in current and</p>	9.953	10.404	10.612	0.000	10.612

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 373G / <i>GDF - MTD (Military Medical Photonics)</i>

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>future battlefield. Materiel and knowledge solutions will focus on innovative capabilities for use in the far forward environment that will cognitively and physically off load the medics in Large Scale Combat operations (LSCO). Focus areas will be cutting edge diagnostics that are of low cube and weight and can be used by minimally trained Warfighters at the point of injury, miniature and rugged imaging capabilities, and novel therapeutics for wound repair, vascular rupture diagnosis and repair. Photonics- based diagnostics will be integrated across the continuum of care, including early detection of airway inhalation injury and implantable biomarker sensors and Photobiomodulation to affect cognitive function.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase due to inflation</p>					
Accomplishments/Planned Programs Subtotals	9.953	10.404	10.612	0.000	10.612

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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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 0603115DHA / Medical Technology Development				Project (Number/Name) 373H / GDF - MTD (Medical Advanced 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
373H: GDF - MTD (Medical Advanced Technology)	0.000	0.000	68.016	68.823	0.000	68.823	65.066	64.322	64.330	65.617	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project supports the application of applied research to develop medical advanced technology related to 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 - MTD (Medical Advanced Technology)	0.000	68.016	68.823	0.000	68.823
<p>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 0603002A & 0603115A. This project supports application of applied research to develop Medical Advanced Technology related to drugs, vaccines, medical devices, diagnostics, medical practices/procedures, and other preventive measures essential to the protection and sustainment of Warfighter health.</p> <p>FY 2023 Plans: Efforts will focus on Advanced Technology Development of Medical Technology.</p> <p>FY 2024 Base Plans: Efforts will focus on Medical Advanced Technology development 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 Expository Medical Skills, Sustained Medical Readiness, Warfighter Protection & Survivability and Wound Management.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>					

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 373H / <i>GDF - MTD (Medical Advanced Technology)</i>

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	68.016	68.823	0.000	68.823
	FY 2022	FY 2023			
Congressional Add: N/A	0.000	-			
FY 2022 Accomplishments: N/A					
Congressional Adds Subtotals	0.000	-			

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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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 0603115DHA / <i>Medical Technology Development</i>				Project (Number/Name) 378B / <i>CoE-Breast Cancer Center of Excellence (USUHS)</i>			
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
378B: <i>CoE-Breast Cancer Center of Excellence (USUHS)</i>	31.076	10.534	11.116	11.339	0.000	11.339	11.566	11.797	12.033	12.274	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Breast Cancer CoE provides a multidisciplinary approach as the standard of care for treating breast diseases and breast cancer. This approach integrates prevention, screening, diagnosis, treatment and continuing care, incorporation of advances in risk reduction, biomedical informatics, tissue banking and translational research. The project is based on a discovery science paradigm, leveraging high-throughput molecular biology technology and our unique clinically well-characterized tissue repository with advances in biomedical informatics leading to hypothesis-generating discoveries that are then tested in hypothesis-driven experiments.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Breast Cancer Center of Excellence	10.534	11.116	11.339	0.000	11.339
Description: Breast cancer is the second leading cause of cancer death in women in the United States. The Readiness and Lethality of the Total Force is based in large part on personnel health. Nearly 20% of the active-duty force is now female, and breast cancer is the number one cancer in active-duty women, far surpassing all other causes of cancer in this population. The Breast Cancer CoE utilizes a multidisciplinary approach for researching breast diseases and breast cancer focused on the military at-risk active-duty population in order to enhance Readiness of The Total Force. This multidisciplinary model integrates prevention, screening, early diagnosis, treatment and continuing care, but the project is further unique in the incorporation of advances in risk reduction, biomedical informatics, tissue banking and translational research. The project is based on a Discovery Science paradigm, leveraging high-throughput molecular biology technology and our unique clinically and pathologically well-characterized tissue repository with advances in biomedical informatics leading to hypothesis-generating discoveries that are then tested in hypothesis-driven experiments.					
In addition to the primary achievement of research objectives, the program educates Federal employees as a benefit to the public they serve through Federal service, through support to civil authorities, and in non-Federal professional and academic collaborations.					
FY 2023 Plans: Objective 1: Identify and consent during this cycle and across our tissue source site network a minimum of 100 CBCP patients (to include patients at high risk for development of breast cancer) annually to the MCCR P APOLLO germline sequencing research study, with special focus on active-duty females as a Force Protection / Readiness sustainment issue to the DoD.					

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 378B / <i>CoE-Breast Cancer Center of Excellence (USUHS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Objective 2: Accrue over 500 patients annually in FY22 to the “core” USU MCCR/BC-COE (CBCP) protocols by consenting patients at our tissue source and clinical sites, with the main site being the Murtha Cancer Center’s Breast Center at WRNMMC, the military’s largest and only NAPBC (National Accreditation Program for Breast Centers) and Breast Imaging Center of Excellence of the American College of Radiology approved breast center in the entire DoD MHS.</p> <p>Objective 3: Expand USU’s breast tissue acquisition to include more military veterans, by acquiring tissues and enrolling veterans in Breast CoE/MCCR/BC-COE protocols who are receiving care at the VA hospitals in North Texas, Boston, and additional VA hospitals. Acquire through consented protocol acquisitions, over 5,000 specimens annually (neo-plastic and non-neoplastic breast tissues and tumors, lymph nodes, metastatic deposits, blood and its components, bone marrow) on patients with all types of breast disease and cancer with an expanded focus on active duty, younger women, and veterans and being able to perform deeper research into the unique aspects of breast cancer risk, development, and outcomes in younger women versus older women.</p> <p>Objective 4: Bank these biospecimens in the USU MCCR/BC-COE Biorepository as the foundation for all molecular analyses carried out in USU MCCR/BC-COE labs, as outlined in the USU MCCR/BC-COE Core Protocols. Utilize this repository as the basis for intramural and extramural collaborations for secondary usage research.</p> <p>Objective 5: Because of the expansion into VA sites and as an extension of the continued modernization of our world-class biobank, develop additional new quality assurance programs and standard operating procedures for the Tissue Bank regarding these new elements and sites from the VA and others including conducting biospecimen science research. There are 7 subtasks (all are ongoing tasks as part of the biobanking activities):</p> <ol style="list-style-type: none"> 1) Incorporate the Standard PReanalytical Code (SPREC) into our daily tissue banking activities. 2) Temperature Validation Mapping 3) Sample Quality Assessment 4) Accreditation by CAP and ongoing re-inspection 5) Develop and implement a disaster plan 6) Biospecimen Science Research 7) Establishing evidence based Standard Operating Procedures (SOPs) and new collection methods <p>Objective 6: Conduct integrative profiling research, for protein-expression based, clinically relevant breast cancer stratification. There are 4 subtasks (Ongoing for incoming samples):</p> <ol style="list-style-type: none"> 1) Active case IHC assays of a panel of 20 IHC biomarker 2) IHC assays of a panel of 27 biomarkers named Connectivity Map 3) High Density TMA analysis of biomarkers associated with the development of endocrine resistance 4) Mass spectrometry-based -omics analysis of Breast Cancer of selected subtypes 					

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 378B / <i>CoE-Breast Cancer Center of Excellence (USUHS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Objective 7: Breast cancer studies focused on two special patient groups bearing poor outcomes, who are enriched in the military active-duty military population: young women, and African American women. There are 3 subtasks (Ongoing):</p> <ol style="list-style-type: none"> 1) Determination of factors affecting breast cancer etiology and outcome in special populations 2) Is young age of diagnosis an independent predictor for the outcome of invasive breast cancer? 3) Integrative comparative analysis of breast cancer in African American and Caucasian American women <p>Objective 8: Focus on samples from female veterans and female active-duty service members with breast cancer, perform new heterogeneity studies, including cellular heterogeneity of tumor development environment and lineage heterogeneity within one physical cancer tumor. There are 3 subtasks (Ongoing):</p> <ol style="list-style-type: none"> 1) Breast Cancer Immunome 2) Identification of molecular factors in tumor epithelium and stroma contributing to tumor etiology 3) Breast cancer tumor heterogeneity study through sequencing analysis <p>Objective 9: Studies on mechanistic understanding of breast cancer development from other perspectives, including genetic dispositions, exposure to environmental risks, access to healthcare, and impact of certain lifestyle factors as well as comorbidities. There are 3 subtasks (Ongoing):</p> <ol style="list-style-type: none"> 1) Evaluation of the effect of environmental exposures on breast cancer risk and outcomes 2) Identification of patients with hereditary breast cancer 3) Development of lifestyle modification programs for active duty and military dependents to increase cancer prevention and survivorship <p>Objective 10: Breast cancer HER2 Targeted Therapy Optimization (Ongoing)</p> <p>Objective 11: With the new addition of VA hospital sites for breast tissue collections and clinical data collation under research protocols, create an informatics infrastructure system to support these new needs of BC-COE research. There are 3 subtasks:</p> <ol style="list-style-type: none"> 1) Develop the Data Tracking System (DTS) to track clinical research and scientific research activities. 2) Develop and improve data QA programs and SOPs (Ongoing) 3) Re-develop the Data Warehouse for Translational Research using current technologies and by integrating data generated by internal scientists, through collaborations, and those available in the public as needed, to facilitate integrative data analysis (Ongoing). <p>Objective 12: Analysis of the publicly available TCGA, CPTAC, and other large scale cancer study datasets (Ongoing).</p> <ol style="list-style-type: none"> 1) Continue to use the public data where appropriate to support the internal research projects, for example by validating the internal findings. 					

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 378B / <i>CoE-Breast Cancer Center of Excellence (USUHS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
2) Continue to use the public data for hypothesis generation, and validation of the findings using independent datasets from the public or internal projects. Example projects including, gene signature development, treatment data analysis, and follow-up data analysis. FY 2024 Base Plans: Continuation of objectives from FY 2023. FY 2024 OCO Plans: N/A FY 2023 to FY 2024 Increase/Decrease Statement: Pricing adjustment for inflation.					
Accomplishments/Planned Programs Subtotals	10.534	11.116	11.339	0.000	11.339

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.

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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 0603115DHA / <i>Medical Technology Development</i>				Project (Number/Name) 379B / <i>CoE-Gynecological Cancer Center of Excellence (USUHS)</i>			
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
379B: <i>CoE-Gynecological Cancer Center of Excellence (USUHS)</i>	27.167	9.201	9.719	9.913	0.000	9.913	10.111	10.313	10.519	10.728	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Gynecologic Cancer Center of Excellence (GYN-COE) utilizes a program project type of strategy with overarching objectives to advance knowledge, prevention strategies, companion biomarkers and assays, treatments and interventions across the continuum of care in gynecologic oncology. Our twelve program projects run in parallel rather than in sequence with advances implemented over five years rather than 12 months. Some subprojects target discovery investigations and mechanistic studies whereas others focus on clinical evaluations, population studies and further development leading to deployment. The introduction of new subprojects and maturation of other subprojects allows the GYN-COE to continue to emphasize military and clinical relevance, prioritize bench to bedside translation, and infuse in advances in science, medicine and technology to meet our objectives.

The Gynecologic Cancer Center of Excellence (GYN-COE) is an integrated translational research program aimed at development of companion biomarkers and assays, clinical decision support tools, risk assessment algorithms, quality improvement initiatives, treatments, and interventions for patients with gynecologic tumors and cancers, among a growing proportion of active duty women in the Armed Services, veteran and retired populations. Molecular profiling of pre-cancerous and malignant lesions has also enabled development of diagnostic and chemo-preventive interventions across the most common pathologic uterine conditions, rare variants, and the aggressive and deadly metastatic and recurrent malignancies that affect women and corresponding readiness. The GYN-COE has been the leading research program in the U.S. to identify clinical features, biologic etiologies, and social determinants underlying racial and ethnic disparities in gynecologic cancers using population based as well as translational research methods. The GYN-COE program features both the largest tissue laser capture microscopy facility as well as the most robust mass spectrometry-based proteomics facility in the DoD, enabling the program to assess the generalized relevance of GYN-COE discoveries in other cancers that impact service members and readiness. The comprehensive research program supports the training of subspecialty gynecologic oncology surgeons, a fellowship program that has trained advanced pelvic surgeons to support wartime efforts for the past 50 years. The program also educates and trains medical students, interns and residents in women’s health, telemedicine, wellness, wound-healing, hemorrhage, infections, pain management, resistance, resilience, palliative care and evidence-based medicine. The program has partnered with the National Cancer Institute in its educational and investigative activities over the past 20 years becoming a pillar program for the Murtha Comprehensive Cancer Center and the Uniformed Services University. The GYN-COE has also strengthened cancer capabilities, advanced the federal precision oncology initiatives, contributed to the COVID-response, enabled delivery of equitable care to female service members, veterans and beneficiaries, and ensured readiness of the female fighting force by addressing their gender-specific medical conditions.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Gynecological Cancer Center of Excellence	9.201	9.719	9.913	0.000	9.913

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 379B / <i>CoE-Gynecological Cancer Center of Excellence (USUHS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Description: The Gynecological Cancer Center of Excellence focuses on characterizing the molecular alterations associated with benign and malignant gynecological disease and facilitates the development of novel early detection, prevention and novel biologic therapeutics for the management of gynecological disease. The GYN-COE leverages innovative research to enhance gynecologic cancer care from prevention to survivorship for service members, beneficiaries, and the civilian population.</p> <ul style="list-style-type: none"> • To use extraordinary analytical capabilities in sample preparations combined with micro-scaled proteogenomic analysis for development of companion diagnostics, theragnostics, prognostics and prediction models for provision of precision medicine to GYN cancer patients as well as agnostically to all patients through pan-cancer discovery. • The throughput of our analytical facility will open up opportunities to expand our capabilities for proteogenomic tissue profiling of biopsy sized specimens to support ancillary studies of drug response and resistance in clinical trial patients aimed at repurposing of FDA-approved drugs for pan-cancer treatment in partnership with public, private, and industry organizations. • Use of our technologies to support proteogenomic characterization of the world’s most rare and yet most clinically devastating diseases in partnership with the Joint Pathology Center. • Deployment of our analytical expertise to support research involving COVID related threats, combat related disorders, and behavioral health disorders, such as PTSD and others that are prevalent in retired veterans. • To expand our racial disparities research using the PAIRED consortium to support investigation of any cancer type or other disease for which there are worse outcomes in minority populations. • To provide undergraduate and graduate medical training in advanced pelvic surgery and complex gynecologic conditions within the context of a specialized fellowship in gynecologic oncology that produces physician scientists fluent in the latest advances of precision medicine for gynecologic cancer patients • Continue to serve as the comprehensive cancer center for gynecologic oncology clinical trial patients of the National Institutes of Health and veterans from regional VA facilities <p>FY 2023 Plans: Will advance optimization and deployment of companion assays, clinical support tools and predictive analytics to improve racial and cancer health equity, military readiness, capabilities, efficiency, and outcomes.</p> <p>FY 2024 Base Plans: Will continue efforts from FY 2023.</p> <p>FY 2024 OCO Plans:</p>					

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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 0603115DHA / <i>Medical Technology Development</i>		Project (Number/Name) 379B / <i>CoE-Gynecological Cancer Center of Excellence (USUHS)</i>				
B. Accomplishments/Planned Programs (\$ in Millions)				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A								
FY 2023 to FY 2024 Increase/Decrease Statement: Pricing adjustment for inflation.								
Accomplishments/Planned Programs Subtotals				9.201	9.719	9.913	0.000	9.913
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.								

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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 0603115DHA / Medical Technology Development	Project (Number/Name) 381 / CoE - Integrative Cardiac Health Care (USUHS)
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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
381: CoE - Integrative Cardiac Health Care (USUHS)	7.609	1.684	1.809	1.875	0.000	1.875	1.943	1.982	2.022	2.062	Continuing	Continuing

A. Mission Description and Budget Item Justification

The USUHS Military Cardiovascular Outcomes Research (MiCOR) program was established in FY 2019 (formerly the Integrative Cardiac Health Care). Its mission is to:

1. Address the gaps identified in the Cardiovascular Care Initial Capabilities Document (ICD) (CRM-2017.03.23)
2. Enhance the cardiovascular health and well-being of the Warfighter and the DoD community through innovative clinical research using precision techniques.
3. Identify precision strategies for early detection, monitoring, and reduction of preclinical/clinical cardiovascular disease and related chronic disease risks for improved clinical outcomes.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Integrative Cardiac Health/Military Cardiovascular Outcomes Research	1.684	1.809	1.875	0.000	1.875
Description: USUHS is a “central focal point for health-related education and training, research and scholarship, and leadership support to operational military units around the world” and is the ideal engine to establish a strategic partnership to address cardiovascular health.					
FY 2023 Plans: -Continue enrollment and conduct of study schedules for the six studies in the active phase. -Finalize analysis on the four studies in the post completion stage. Disseminate results accordingly to high impact journals. -Complete regulatory tasks (IRB, agreements, protocol development, etc.) for remaining studies in order for those studies to enter the active research phase. -Convene national committee of experts to formulate “Guidelines for the Cardiovascular Care of the Tactical Athlete” in collaboration with DHA, American Heart Association, and the American College of Cardiology. Tactical athletes include active duty military, astronauts, police officers, and firefighters. -Perform machine learning on 1,000,000 legacy electrocardiograms linked with MDR to identify novel biomarkers of cardiac risk. -Publish analysis of 5,000 sleep polysomnograms for evaluation of electrocardiographic biomarkers as predictors of death.					
FY 2024 Base Plans:					

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 381 / <i>CoE - Integrative Cardiac Health Care (USUHS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
FY 2024 plans continue efforts as outlined in FY 2023.					
<i>FY 2024 OCO Plans:</i> N/A					
<i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Pricing adjustment for inflation.					
Accomplishments/Planned Programs Subtotals	1.684	1.809	1.875	0.000	1.875

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.

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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 0603115DHA / Medical Technology Development	Project (Number/Name) 382B / CoE-Pain Center of Excellence (USUHS)
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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
382B: CoE-Pain Center of Excellence (USUHS)	8.523	1.965	2.084	2.156	0.000	2.156	2.230	2.277	2.327	2.374	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Pain Center of Excellence examines the relationship between acute and chronic pain and focuses on finding, implementing, and evaluating the most effective methods of relieving the acute pain caused by combat trauma and the effect pain has throughout the continuum of care to rehabilitation and reintegration. The mission of the Pain CoE is to support provision of world-class clinical pain services and operational anesthesia in the Military Health System, provide education on all aspects of pain management, coordinate and conduct Institutional Review Board-approved clinical research and Institutional Animal Care and Use Committee-approved basic laboratory and translational pain research, and serve as the advisory organization for developing an enterprise-wide pain policy for the Military Health System. In FY 2015, management of the Pain CoE was transferred from the Army to USUHS.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Title: Pain Center of Excellence (USUHS)</p> <p>Description: The Pain Center of Excellence examines the relationship between acute and chronic pain and focuses on finding, implementing, and evaluating the most effective methods of relieving the acute pain caused by combat trauma and its impact on rehabilitation and recovery. The center also supports knowledge translation activities that are aimed at integrating research findings into military medicine clinical practice and policy.</p> <p>In addition to the primary achievement of research objectives, the program educates Federal employees as a benefit to the public they serve through Federal service, through support to civil authorities, and in non-Federal professional and academic collaborations.</p> <p>FY 2023 Plans:</p> <ol style="list-style-type: none"> Conduct implementation science research, provide subject matter expert support for a diverse portfolio of DoD/DHA pain management/opioid safety activities and initiatives, and facilitate the development of evidence-based policies. Support innovative research by continuing recruitment into the robust Pain Registry Biobank at both of its sites and conducting research that leverages PASTOR/PROMIS outcomes. Conduct rigorous research that supports healthcare optimization and equity in pain management and analgesia. This includes collaborative studies with partners across civilian, VA, and military institutions. Studies expand across several aspects of pain management and analgesia pathways. 	1.965	2.084	2.156	0.000	2.156

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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 0603115DHA / Medical Technology Development	Project (Number/Name) 382B / CoE-Pain Center of Excellence (USUHS)

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>4. Continue to conduct several studies aimed at evaluating anesthesiology and pain management training, workforce readiness, and career sustainment within medical school, residency, and practice settings.</p> <p>5. Provide functional support to integrate PASTOR at all remaining MTF pain management specialty clinics.</p> <p>6. To conduct a study examining whether early treatment with NMDA-antagonist ketamine will decrease the likelihood of the development of chronic pain and PTSD using a mouse model.</p> <p>7. Engage in many service activities to support research training and development for USU medical students, DoD residents, and DHA providers. These activities included mentoring USU Capstone students, resulting in many posters and publications; expanding implementation of a residency research program beyond current efforts at Walter Reed National Military Medical Center (WRNMMC) to all ANE GME sites; advising Anesthesiology residents and faculty on their research projects; and providing support for research development for military anesthesiologists.</p> <p>FY 2024 Base Plans: FY 2024 plans continue efforts as outlined in FY 2023.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Pricing adjustment for inflation.</p>					
Accomplishments/Planned Programs Subtotals	1.965	2.084	2.156	0.000	2.156

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.

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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 0603115DHA / <i>Medical Technology Development</i>				Project (Number/Name) 383A / <i>CoE-Prostate Cancer Center of Excellence (USUHS)</i>			
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
383A: <i>CoE-Prostate Cancer Center of Excellence (USUHS)</i>	24.806	8.417	8.870	9.047	0.000	9.047	9.228	9.413	9.600	9.792	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Center for Prostate Disease Research (CPDR) is DoD designated Prostate Cancer Center of Excellence (CoE) conducting interdisciplinary translational cancer research program of the Murtha Cancer Center, Department of Surgery, Uniformed Services University of the Health Sciences (USUHS), and the Walter Reed National Military Medical Center (WRNMMC). The CPDR conducts state-of-the-art clinical, translational and epidemiological research with an emphasis on precision medicine to enhance the readiness of active-duty personnel in conjunction with the continuum of medical care for military retirees and beneficiaries. Ground-breaking discoveries through strong academic and clinical research (e.g., 30 yrs. and over 450 publications) have led to major advances in translational prostate cancer research and treatment. The CPDR integrates expertise of urologic and medical oncologists, cancer biologists, genitourinary pathologists, epidemiologists, biostatisticians, medical technologists, research nurses, patient educators, and program management specialists. All these areas of expertise provide state-of-the-art resources for in-house and collaborative research in prostate cancer. The CPDR enriches the training of the next generation of physicians/scientists who directly benefit the quality, outcomes, and stability of the military health care delivery system.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: CoE-Prostate Cancer Center of Excellence (USUHS)	8.417	8.870	9.047	0.000	9.047
Description: The Prostate Cancer Center of Excellence is at the forefront of “cutting-edge” translational, clinical, and epidemiologic prostate cancer research. The emphasis is on improving prevention, diagnosis, prognosis and treatment of prostate cancer involving new modalities such as MRI guided biopsy, gene-based biomarkers, and precision medicine strategies targeting cancer-causing alterations in prostate cancer. The CoE multi-center database (WRNMMC, NMCS, BAMC, MAMC, TAMC) is a unique programmatic resource, enrolling over 30,500 DoD health care beneficiaries with longitudinal follow up to 30 years. Research from the Prostate CoE highlights genetic and genomic racial/ethnic differences, discovery of novel prognostic markers, treatment outcomes, and new insights into quality of life. The Prostate CoE’s health disparity research focus has uniquely benefited from studying prostate cancer patients in the DoD with high representation of African American men, in an equal-access military health care system. The CoE has been credited for the discovery of the frequent overexpression of the most common prostate cancer driver gene, ERG, the development of urine and tissue assays to detect ERG; the discovery of tumor genomic differences between African American and Caucasian American patients; and the discovery of inherited gene mutations that drive aggressive prostate cancers of African American men. The Prostate CoE’s					

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 383A / <i>CoE-Prostate Cancer Center of Excellence (USUHS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)

state-of-the-art research infrastructure and framework is providing education and training for over 100 next generation physicians, scientists, medical and graduate students within DoD medical institutions.

FY 2023 Plans:

- New initiatives planned for FY 2023 under the MCC cooperative efforts include the development of a centralized imaging and pathology review capability and to develop tumor boards for prostate cancer treatment integrating DoD prostate cancer treatment sites and the Joint Pathology Center under the guidance of the CoE's-Clinical Research Program.
- New aspects of the CoE's Epidemiology research will include enhanced data mining capabilities and outcome research for improving the rehabilitation of active-duty service members.
- The CoE's-Clinical Research Program, will continue to enhance the multidisciplinary research on prostate cancer screening, data collection, clinical diagnosis, and treatment, education, and counseling, in a personal- and patient-oriented manner.
- The Clinical Research program will continue the highly successful collaborations with NCI-Medical Oncologists focusing on new treatments and patient consultation on advanced disease.
- The CoE will broaden the spectrum of clinical trials introducing new trials for advanced prostate cancer patients, patients on active surveillance and new imaging technologies. The CoE will continue clinical trials for immunotherapy, cancer vaccine, screen, and prevention-focused clinical trials.
- The Clinical Program will continue consenting patients and collecting serum, urine, tissue specimens and clinical follow up data through the integrated MCC biospecimen banking program and the CoE's multicenter national database (WRNMMC, NMCSO, BAMC, MAMC, TAMC).
- The CoE's-Translational Research Program, integrated under the Cancer Moonshot APOLLO program, will continue the discovery of prostate cancer-causing gene defects with a special focus on health disparities.
- The program will continue developing biomarkers that equally perform in African American and Caucasian American patients.
- The CoE's-Translational Research Program will leverage the ground-breaking discovery of African ancestry-related inherited mutations associated with the development of aggressive prostate cancer. The CoE's research in FY23 will focus on formulating clinical-grade genetic tests.
- The CoE will initiate new research for understanding the mechanisms and roles of environmental exposure in prostate cancer initiation and progression including radiation, chemical carcinogens, infection and disruption in circadian rhythm and the role of immunology and cytokines.
- The CoE's-Translational Research Program will refine new therapeutic molecules developed by the CoE or collaborators, for the treatment of advanced prostate cancer.

FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 383A / <i>CoE-Prostate Cancer Center of Excellence (USUHS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
	<ul style="list-style-type: none"> The CoE's-Translational Research Program will complete the first phase of introducing artificial intelligence (AI) for the diagnosis and prognosis of prostate cancer in whole-mounted prostate specimens in collaboration with the Joint Pathology Center and NCI. <p>FY 2024 Base Plans: FY 2024 plans continue efforts as outlined in FY 2023.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Pricing adjustment for inflation.</p>				
Accomplishments/Planned Programs Subtotals	8.417	8.870	9.047	0.000	9.047

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.

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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 0603115DHA / Medical Technology Development	Project (Number/Name) 478 / Applied Proteogenomics Organizational Learning and Outcomes (APOLLO) Consortium (USUHS)
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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
478: Applied Proteogenomics Organizational Learning and Outcomes (APOLLO) Consortium (USUHS)	51.443	18.083	19.058	29.480	0.000	29.480	29.870	30.267	30.672	31.085	Continuing	Continuing

Note

Murtha Cancer Center (APOLLO Project):

DHA internally realigned \$10M per year (\$50M over FYDP) from Project 373B to Project 478 in support of the Murtha Cancer Center Applied Proteogenomics Organizational Learning and Outcome (APOLLO Project), to accelerate and broaden the successful research efforts in the development of new cancer treatments.

A. Mission Description and Budget Item Justification

DoD Cancer Moonshot - Applied Proteogenomics Organizational Learning and Outcomes (APOLLO) Consortium (USUHS)

DoD's Cancer Moonshot requirement is a mission of the Murtha Cancer Center (MCC) at USUHS under the authority of a tri-federal Memorandum of Agreement signed July 2016 by the Acting Assistant Secretary of Defense for Health Affairs (DoD), the Under Secretary of Health, Department of Veterans Affairs (VHA), and the Acting Director of the National Cancer Institute (NIH), for a tri-federal program of Clinical Proteogenomics Cancer Research. DoD's Cancer Moonshot promotes readiness and mission accomplishment of the active duty service member (ADSM) force, as well as military beneficiaries, retirees, and veterans. There are about 1,000 ADSMs who are stricken with a new cancer diagnosis annually, and MCC serves as the DoD's Health Affairs-approved Center of Excellence for cancer care and research for these ADSMs. MCCRPs mission is to bring translational cancer research to all patients in order to improve their health and mission performance, and to help prevent, screen, detect, and treat cancer; minimize side effects of cancer treatments; and return to duty ADSMs stricken with cancer, as well as all other DoD beneficiaries. DoD's Cancer Moonshot initiative allows for the provision of state-of-the-art molecular analysis of tumors and blood of cancer patients which will result in increased force readiness through more targeted treatment of cancers with fewer side effects, as well as better screening for cancer risk and development.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: DoD Cancer Moonshot - Applied Proteogenomics Organizational Learning and Outcomes (APOLLO) Consortium (USUHS)	18.083	19.058	29.480	0.000	29.480
Description: DoD's Cancer Moonshot at USU's Murtha Cancer Center Research Program MCCRPs is a research program consisting of two overall projects, the first known as APOLLO (Applied Proteogenomics Organizational Learning and Outcomes), and the second as DoD Framingham.					

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 478 / <i>Applied Proteogenomics Organizational Learning and Outcomes (APOLLO) Consortium (USUHS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>APOLLO is a novel high-throughput molecular analysis of every DNA (gene), RNA, and protein expression molecule in cancer patient tumors. Such analysis has never been done on a large scale across multiple cancer types, and small pilot studies demonstrate that the APOLLO project will result in unprecedented findings across all types of cancer (with specific focus on cancers of the greatest threat to ADSMs). These new findings will be identified by using state-of-the-art tissue collection procedures in the operating rooms of all patients undergoing cancer surgery at MCCRP collection protocol sites (e.g. Walter Reed, NMMC; NMC Portsmouth; NMC San Diego; Womack AMC; Keesler AFB) and, then, sequencing the entire DNA genome and RNA sequence at USUHS, while analyzing the entire protein expression profile of these same cancers in MCCRP's Proteomics Laboratory, as well as other affiliated protein laboratories. The vast molecular data that will be derived from these analyses (in the terabyte and petabyte range and beyond) will be linked to clinical patient data as well as treatment outcomes data. These combined data sets will be housed in National Cancer Institute (NCI) secure cloud-based servers with restricted access for analytics by teams of bioinformatics experts (i.e., from government, university, and corporate entities) across the United States working on this endeavor. This complete bio molecular (global) expression profiling of thousands of cancers of all types seen in military treatment and other facilities will predictably result in a myriad of new discoveries regarding the way cancers develop, progress, respond to treatment, evade treatment, and spread. It also will result in new ways to combat cancers and minimize side effects of cancer treatment, as well as identify novel cancer screening and prevention opportunities, while focusing on militarily-relevant cancers and ADSMs with cancer, distinguishing it from any effort that might develop in the future in a civilian organization, as none of this scale exists today. There are now 8 specific APOLLO sub-projects, which are classified based on the organ type of cancer under study: APOLLO 1 = Lung cancer - 10th Highest Cause of Cancer in Active Duty; APOLLO 2 = Gynecological cancer - 12th Highest Cause of Cancer in Active Duty; APOLLO 3 = Prostate cancer - 3rd Highest Cause of Cancer in Active Duty; APOLLO 4 = Breast cancer - 5th Highest Cause of Cancer in Active Duty; and APOLLO 5 = prospectively-collected VA, DoD, and NCI specimens and data for all organ sites, APOLLO 6: Pancreatic Cancer - 13th Highest Cause of Cancer in Active Duty and APOLLO 7 : Testicular Germ Cell Tumors - Highest Cause of Cancer in Active Duty and APOLLO 8 Glioblastoma the 7th highest cause of Cancer in Active Duty.</p> <p>In addition to the primary achievement of research objectives, the program educates Federal employees as a benefit to the public they serve through Federal service, through support to civil authorities, and in non-Federal professional and academic collaborations.</p> <p>FY 2023 Plans:</p>					

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 478 / <i>Applied Proteogenomics Organizational Learning and Outcomes (APOLLO) Consortium (USUHS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Specifically, the APOLLO project will collect, process, and analyze cancer specimens from patients who have been diagnosed with cancer or at risk for cancer and who are eligible for and have consented to the protocols. All MCCRCP tissue source sites will be utilized which include 8 MTFs and MEDCENS in the MHS, as well as 3 VA sites and one civilian site. Active duty service members diagnosed with cancer at these MHS locations will be preferentially prioritized for offers of enrollment in APOLLO in order to make sure the DoD is providing state-of-the-art research and clinical translational care opportunities to our active duty force to maintain and sustain the highest level of Readiness.</p> <p>The program will complete the following tasks: Task 1: Patients will be recruited and consented for this APOLLO protocol after being successfully recruited into and following the established procedures for the protocols: Establishment of a Tissue Repository for the Murtha Cancer Center Biobank (MCCB), Tissue and Blood Library Establishment for Molecular, Biochemical, and Histologic Study of Breast Disease, and Creation of a Blood Library for the Analysis of Blood for Molecular Changes Associated with Breast Disease and Breast Cancer Development. Task 2: Clinical data collection and quality assurance will follow the established procedures for the sample and data collection protocols. In addition, data may be obtained for the APOLLO study from the DoD Central Tumor Registry (OncoLog) or from the electronic medical records of APOLLO study participants. Task 3: Clinical pathologic slide imaging data will be collected for APOLLO study participants. Clinical pathologic slide imaging data will undergo quality assurance and de-identification procedures at WRNMMC and all other enrolling MTFs and MEDCENS. Task 4: Quality assurance and annotation of samples: The Joint Pathology Center (JPC) will continue to serve as the research pathology annotation center for the APOLLO project for the purpose of annotating pathological diagnoses, expanding pathologic characteristics of samples, and reviewing pathology data variables as defined in this protocol. Task 5: Genomic and proteomic profiling of samples will continue to be conducted by The American Genome Center (TAGC) at the USUHS in Bethesda, MD and the Murtha Cancer Center Research Program's Clinical Proteomics Platform (CPP) Consortium associated with the Gynecologic Cancer Center of Excellence (GYN-COE) at Inova Health System in Fairfax, VA and its associated laboratories at Northwestern University in Evanston, IL and Vanderbilt University in Nashville, TN. Task 6: Coded proteogenomic profiling (molecular) and sample sequencing data along with associated coded clinical data will continue to be transferred to an intermediate NCI protected server ("Jamboree site") and/or an NCI-approved government "Wiki" site at the NCI, and ultimately to the Genomic Data Commons (GDC)</p>					

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 478 / <i>Applied Proteogenomics Organizational Learning and Outcomes (APOLLO) Consortium (USUHS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>and Proteomic Data Commons (PDC). This same data will be securely transferred to certain partners who are assisting in performing integrative analyses of complex DNA, RNA, protein, and clinical data sets and/or in developing bioinformatics tools to do the same.</p> <p>Task 7: APOLLO 8 (7th Highest Cause of Cancer in Active Duty): Research on Malignant Brain Tumors (REMBRANT) Perform comprehensive neuropathologic examination of the available military glioblastoma (GBM) cases, and any available ante-mortem neurosurgical material for each decedent in the study. Perform genetic and proteomic characterization of the available military GBM cases to investigate potential associations with clinical outcomes.</p> <p>FY 2024 Base Plans: Continuation of above efforts from FY 2023.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Pricing adjustment for inflation.</p>					
Accomplishments/Planned Programs Subtotals	18.083	19.058	29.480	0.000	29.480

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.

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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 0603115DHA / Medical Technology Development				Project (Number/Name) 479 / Framingham Longitudinal Study (USUHS)			
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
479: Framingham Longitudinal Study (USUHS)	14.586	4.765	5.018	5.118	0.000	5.118	5.220	5.324	5.430	5.539	Continuing	Continuing

A. Mission Description and Budget Item Justification

DoD Cancer Moonshot Program - DoD Framingham

DoD's Cancer Moonshot requirement is a mission of the Murtha Cancer Center (MCC) at USUHS under the authority of a tri-federal Memorandum of Agreement signed July 2016 by the Acting Assistant Secretary of Defense for Health Affairs (DoD), the Under Secretary of Health, Department of Veterans Affairs, Veterans Health Administration (VHA), and the Acting Director of the National Cancer Institute (NIH), for a tri-federal program of Clinical Proteogenomics Cancer Research. DoD's Cancer Moonshot promotes readiness and mission accomplishment of the active duty service member (ADSM) force, as well as military beneficiaries, retirees, and veterans. There are about 1,000 ADSMs who are stricken with a new cancer diagnosis annually, and MCC serves as the DoD's Health Affairs-approved Center of Excellence for cancer care and research for these ADSMs. MCC's mission is to bring translational cancer research to all patients in order to improve their health and mission performance, and to help prevent, screen, detect, and treat cancer; minimize side effects of cancer treatments; and return to duty ADSMs stricken with cancer, as well all other DoD beneficiaries. DoD's Cancer Moonshot initiative allows for the provision of state-of-the-art molecular analysis of tumors and blood of cancer patients which will result in increased force readiness through more targeted treatment of cancers with fewer side effects, as well as better screening for cancer risk and development.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: DoD Cancer Moonshot Program - DoD Framingham Longitudinal Study	4.765	5.018	5.118	0.000	5.118
Description: DoD Framingham is a novel project that is enabled by the blood serum specimens stored at the DoD Serum Repository (DoDSR) at the Armed Forces Health Surveillance Branch (AFHSB) in Silver Spring, Maryland. This facility stores blood serum drawn from over 10 million ADSMs who were required to undergo mandatory semiannual blood testing for the last 25 years, resulting in this repository with over 65 million blood serum specimens. MCC tumor registry data, which includes every ADSM who developed cancer while on active duty, is matched to data in the Serum Repository. This allows MCC to identify the blood serum of ADSMs who ultimately develop cancer at key times, i.e., before they had cancer, during their cancer treatment, and after their successful cancer treatment. Four different serum specimens (two before, one during, and one after cancer diagnosis and treatment) from every ADSM who developed certain types of cancer over a ten-year period of time are then sent to the Nation's foremost protein identification (mass spectroscopy) center, i.e., the Pacific Northwest National Laboratory (PNNL) run by the Department of Energy (DOE). This enables identification of the entire proteome circulating in the blood serum of these cancer patients before, during, and after cancer diagnosis. Comparing the proteomes will allow for identification of new protein biomarkers and indicators of					

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 479 / <i>Framingham Longitudinal Study (USUHS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>treatment response and failure both of individual patients and across all patients with a specific type of cancer. Smaller studies of this nature done by MCC researchers have proven that this is an effective strategy to identify novel diagnostic and treatment protein expression biomarkers that can be assayed in new blood tests for cancer. This project will do it “at scale”, i.e. in large numbers of active duty cancer patients (who are otherwise healthy and therefore do not have the “confounding” protein markers of old age, diabetes, and other medical issues). By using serums that go back many years before the ADMS was diagnosed with cancer, the earliest markers of cancer that will be identified, and assays will be performed by another U.S. governmental agency with the best protein detection and analysis tools in the world. Eight specific DoD Framingham sub-projects, classified based on the organ type of cancer, will be conducted: Framingham 1 = Oropharyngeal cancer; Framingham 2 = Lymphoma; Framingham 3 = Melanoma; Framingham 4 = Pancreatic cancer; Framingham 5 = Metastatic Cancer to Bone (of any type); and Framinghams 6 through 8 subtypes will be determined by MCC and NCI experts in the coming months.</p> <p>FY 2023 Plans: Specifically, the program will perform the following tasks. Task 1: The Department of Defense (DoD) Joint Pathology Center’s (JPC) Automated Central Tumor Registry (ACTUR) and OncoLog systems will be queried for patients with the identified cancer subject. Task 2: JPC will send the list of approximately 150 identified cancer patients to the AFHSB in order to requisition their sera. Sera from the year of diagnosis, two years pre-diagnosis, four years pre- diagnosis, and two years post-diagnosis will be requisitioned. Each of the 150 patients with identified cancer will be matched by age and sex to 150 controls who were cancer-free for the duration of their active component service, as well as free of autoimmunity, transplant, or immune suppression. Four longitudinal sera samples from each control will be requisitioned to correspond to the time points of the case sera. Task 3: The approximately 150 identified cancer subjects and 150 matched controls, each with up to four longitudinal serum samples for each Framingham project (for a total of about 1,200 serum samples for each Framingham project), will be sent to Pacific Northwest National Laboratory (PNNL) for comprehensive discovery-based quantitative proteomics measurements using the advanced LC-MS/MS platforms established at PNNL. Task 4: Dissemination of data to analysts at the PNNL and in conjunction with Murtha Cancer Center Research Program (MCCRP) at USUHS, who will perform at PNNL statistical analysis by the PNNL Bioinformatics team to examine whether any of the target peptides or group of peptides can be distinguished between the patients and their matched controls for each specific aim of this study.</p> <p>FY 2024 Base Plans:</p>					

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 479 / <i>Framingham Longitudinal Study (USUHS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continuation of FY 2023 plans. FY 2024 OCO Plans: N/A FY 2023 to FY 2024 Increase/Decrease Statement: Pricing adjustment for inflation.					
Accomplishments/Planned Programs Subtotals	4.765	5.018	5.118	0.000	5.118

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.

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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 0603115DHA / Medical Technology Development				Project (Number/Name) 499 / MHS Financial System Acquisition (DHA)			
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
499: MHS Financial System Acquisition (DHA)	37.702	5.792	6.051	6.092	0.000	6.092	6.143	6.266	6.388	6.516	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Defense Health Program (DHP) appropriations' distribution and execution of funding is currently dispersed amongst multiple, disparate accounting systems, which is in direct conflict with Financial Improvement Audit Readiness (FIAR) guidance prioritizing the standardization of financial management systems and business processes. Currently DHP Funding is distributed and executed across three disparate systems.

The current Defense Health Agency (DHA) structure hinders the overarching goal for audit ready initiatives and agency standard financial business processes. The identified solution for DHA to meet these challenges is to deploy a single operational financial management system (FMS) with minimal mission and business impact. DHA is researching a system that will accommodate standard and medically-required business processes. The goal is to transition financial operations to a platform that allows for consistency across the DHA, establishing standardized processes, data collection, and reporting.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: MHS Financial System Acquisition	5.792	6.051	6.092	0.000	6.092
Description: The goal is to transition all Direct Care DHP funds to a single financial system that allows for consistency across the Defense Health Agency and Military Health System, enabling standardized processes, data collection, and reporting.					
FY 2023 Plans: Funding will be used for GFEBS deployment to the Air Force Medical Service (AFMS) and the development of an interface between GFEBS and CON-IT, the Air Force contract writing system.					
FY 2024 Base Plans: Complete AFMS GFEBS deployment activities and future GFEBS system enhancements.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: Pricing adjustment for inflation.					
Accomplishments/Planned Programs Subtotals	5.792	6.051	6.092	0.000	6.092

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 499 / <i>MHS Financial System Acquisition (DHA)</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• BA 3: <i>PE 0807721</i> <i>Replacement & Modernization</i>	0.000	3.000	-	-	-	-	-	-	-	Continuing	Continuing

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.

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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 0603115DHA / Medical Technology Development				Project (Number/Name) 506 / Health Research for Improved Medical Readiness and Healthcare Delivery (USUHS)			
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
506: Health Research for Improved Medical Readiness and Healthcare Delivery (USUHS)	23.045	11.022	11.631	11.883	0.000	11.883	12.141	12.384	12.632	12.885	Continuing	Continuing

A. Mission Description and Budget Item Justification

The “Health Research for Improved Medical Readiness and Healthcare Delivery” program at USUHS answers fundamental questions of importance to the military mission of the Department of Defense in five (5) distinct portfolio areas: health services research, global health engagement, precision medicine, women’s health, and infectious disease clinical research.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Health Research for Improved Medical Readiness and Healthcare Delivery	11.022	11.631	11.883	0.000	11.883
Description: The “Health Research for Improved Medical Readiness and Healthcare Delivery” program at USUHS answers fundamental questions of importance to the military mission of the Department of Defense in five (5) distinct portfolio areas: health services research, global health engagement, precision medicine, women’s health, and infectious disease clinical research.					
Portfolio 1: The mission of the Center for Health Services Research (CHSR) supports the readiness of America’s Warfighter and improved health outcomes for the military community by building capacity throughout the Military Health System (MHS) to conduct health services research that supports MHS goals, the Department of Defense’s (DoD’s) mission and the national security strategy. The program will address the lack of system-wide health care evidence to support policy and decision making and insufficient health services research capability to analyze MHS data for building a ready force, protecting and treating the warfighter, and providing efficient, effective, quality and safe healthcare. CHSR is the only group specifically focusing on system-wide improvement for the MHS and responding directly to priority research requests from the DHA, OSD(HA), and other Federal agencies. This support directly enables DHA RDA Priorities of prioritizing transition and incorporating modernization priorities, which cannot be done without timely, accurate, evidence-based information on which to base decisions. CHSR aligns to joint requirements and meets the JCIDS identified gaps of DK1 and DK3 [DK1: Inconsistent approach to producing knowledge products and tools. 1) Inadequate process to introduce public health surveillance into RDT&E. 2) Inadequate surveillance, data capture, and exposure documentation tracking. 3) Inconsistent use and application of Service’s lessons learned information and how it					

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 506 / <i>Health Research for Improved Medical Readiness and Healthcare Delivery (USUHS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>affects the health community’s RDT&E; DK3: Lack a decision support mechanism that enables timely, accurate decisions and diagnosis at all levels of care]. Recently the CHSR was tapped to lead work on Ukrainian health and trauma system that will build Operational Care knowledge for future US readiness.</p> <p>Portfolio 2: Global Health Engagement (GHE) research is related to operational efforts and advanced technology development efforts that will meet the needs of the Joint Force in either improving the understanding and/or execution of DoD GHE, or utilizing DoD health research activities to engage a partner nation/partner nations in support of Combatant Command Campaign Plan objectives to further research. The GHE research needs of the warfighter are expressed by the regular demand signal of the Joint Force through the Office of the Joint Staff Surgeon (OJSS) and the Combatant Commands (CCMDs) Surgeons’ Offices.</p> <p>Portfolio 3: The Center for Military Precision Health’s (CMPH, formerly known as PRIMER) mission is to conduct innovative research applying genomic science, discoveries, and precision techniques to enhance the health, readiness and well-being of the Warfighter and DoD beneficiaries. CMPH provides standardized state of the art genome and molecular profiling services, genomic data analysis, and genomic data storage under DoD security and privacy compliance policies, addressing 8 separate DoD requirements across the MHS while also providing education in genomic information and performing clinical implementation research in the field of genomic medicine to inform policy and clinical practice guidelines for use of genomics in the MHS. CPMH enables HHS- and DOD-study subjects to participate in translational genomic research studies for human disease and conditions of posttraumatic stress disorder (PTSD), major depressive disorder, suicide-associated behaviors, cardiovascular disease, lung, prostate, breast, gynecological and other human cancers, traumatic brain injury and dementia and other complex human diseases. To date, The American Genome Center at CMPH has completed genomic and transcriptomic profiling on over 120,000 human samples and, MiCOR has screened 4,500 midshipmen for asymptomatic cardiovascular disease.</p> <p>CMPH also supports the Military Cardiovascular Outcomes Research (MiCOR) program to address gap areas identified in the Initial Capabilities Document for Cardiovascular Care with the first prospective genomic evaluation of cardiac arrest in the military (GEMINI study). Current collaborations with MiCOR in focus areas of sudden death examinations and pharmacogenomics are also active to address preventative measures for soldier readiness and health.</p> <p>In response to the COVID-19 pandemic CMPH scientists are collaborating with The National Institute of Allergy and Infectious Diseases (NIAID) and the DoD study EPICC via IDCRP, to provide state of the art molecular profiling and analysis of individuals with COVID related illness. These program projects directly address risk</p>					

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>factors and biomarkers for chronic and severe COVID-related health conditions after viral infection in young service members for readiness measures.</p> <p>Portfolio 4: The Military Women’s Health research program’s (MWHRP) mission is to foster research that influences policy and guides best practices for the health care of Active-Duty Service Women (ADSW) and Veterans. The Military Women’s Health Research Consortium fosters aggregation and facilitates research that supports an operationally ready and deployable female force, improves accessibility and quality of healthcare that addresses the unique health needs of ADSW and veterans, and spans the life course of ADSW as they transition from military service to VA care.</p> <p>Portfolio 5: The Infectious Disease Clinical Research Program (IDCRP) designs and executes multicenter infectious diseases clinical research focusing on high-impact cohorts and interventional trials, to inform and improve care of the Warfighter. The focus is on emerging infections, antimicrobial resistance, and other high priority infections impacting military readiness in US and abroad. IDCRP will generate research evidence to inform warfighter care, develop DoD clinical practice guidance, assess cost effectiveness of interventions, and assist force health protection policy development. IDCRP has continued to focus efforts on DoD-relevant epidemiology efforts plus therapeutic and prophylactics aimed at COVID-19.</p> <p>FY 2023 Plans: CHSR FY 2023 Goals</p> <ul style="list-style-type: none"> • Investigate racial disparities across our top 10 service lines of the MHS: This was recommended by the Defense Health Board and MHS leaders but at present we lack sufficient funds to undertake this research. • Low-value care (LVC) in the MHS: This project directly addresses the 2022 NDAA charging the MHS with reduction of LVC, but funding is scheduled to end in FY23, which will also result in loss of data for continuing the project if funding is not renewed. • Global Burden of Disease in the MHS: uses claims data from the MHS Data Repository (MDR) in an epidemiological methods framework to examine the total burden of disease, measured in disability-adjusted life years (DALYs), across civilian and military MHS beneficiaries. The two study aims are: 1) measure and describe the diseases and injuries related to the loss of health in the MHS population; and 2) investigate changes in population-level health status over time. This includes engagement with USU-PRIMER, USU-MiCOR and the NIH-National Heart, Lung, and Blood Institute (NIH) to determine the burden of heart disease and heart failure in 					

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Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 506 / <i>Health Research for Improved Medical Readiness and Healthcare Delivery (USUHS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>the MHS, and with the NIH-National Center for Deafness and Communication Disorders to determine the burden of hearing loss and vestibular disorders in the MHS.</p> <ul style="list-style-type: none"> • Integrated Practice Unit (IPU) assessment with NICoE: use the NICoE model of co-located, integrated care to develop an IPU tool. • Morale, Manpower, and Medicine with University of Minnesota: assess the relationship between military medicine and military effectiveness, both in morale and as a soft power vs. peer and near-peer competitors. • By Request from OSD(HA): Physician and Nursing Personnel Gaps in MTFs: Optimizing Clinical Productivity during the Transition. • Voice of the Customer: Factors Impacting Choice of Programs in TRICARE (ongoing support to TRICARE and DHA) • Continued development of knowledge translation platform to provide push-pull capability for MHS leaders, clinical communities, and others. • Community building through the more than 130 member strong Health Services Research Interest Group and Value Based Care Journal Club, which is formed by intersectional MHS leaders and national public health leaders. • Develop and sustain Data Coordination Center for USUHS and other researchers needing to work with MHS data sets. • Capacity building through training and workshops including to National USUHS Faculty and MHS providers on the Ethics of Big Data Management and DoD Data Sets for Health Research. • Capacity building through the MPH and PhD in Public Health programs at USUHS. • Emerging Priorities as will be determined by NDAA 2022, DHA, OSD(HA), and other Federal agencies. <p>CGHE FY 2023 Plans: As CGHE activities within CCMDs begin to regain momentum following the pandemic, CGHE is generating programmatic and administrative capacity to support CGHE AME and research requests. The CGHE is working with USCENTCOM to develop a Common Operating Picture for developing current and future USCENTCOM CGHE activities. Findings, recommendations, and process improvements resulting from the FRD and USAFRICOM studies will be generated and submitted during FY23. CGHE has initiated lines of research effort that seek to inform, align, and promulgate knowledge management best practices in support of Center and DoD GHE activities. CGHE knowledge management personnel will continue to collaborate with the FRD in support of this research activity. CGHE is preparing to accommodate the integration of the Defense Institute for Medical Operations (DIMO) within CGHE. Assessment, monitoring, and evaluation (AME) activities</p>					

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Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 506 / <i>Health Research for Improved Medical Readiness and Healthcare Delivery (USUHS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>and research efforts will focus upon supporting CGHE lines of effort and aligning DIMO with CGHE, OJSS, and CCMD mission objectives.</p> <p>CGHE anticipates the allocation of funding for a FY23 GHERI funding cycle, and is preparing to solicit CCMD GHE research priorities to inform a Call for White Papers to be issued in Q2 or Q3 FY23. Research personnel at CGHE will collaborate with USU VPR, ACQ, and FMG personnel to facilitate the administration of the FY23 GHERI, while concurrently working with Service representatives, the NIH Center for Scientific Review, and the National Center for Medical Intelligence for programmatic and scientific review of project submissions. CGHE anticipates additional Assessment, Monitoring and Evaluation efforts based on an on-going IG review in FY23/24.</p> <p>CMPH FY2023 Goals:</p> <ol style="list-style-type: none"> Innovate automated high throughput workflows for established manual methodologies (e.g., single cell transcriptome library preparation, whole genome bisulfite sequencing and synthetic long read genome sequencing). TAGC is currently implementing and validating a robotic liquid handling platform with a single adaptable deck layout for versatile multiomics workflows. The validation of this platform setup will enable replication of these workflows at other sites of laboratory activity with minimal implementation factors. TAGC will establish a minimal set of pre-analytical assessment factors and workflow quality control metrics to provide as a manual of operations to collaborative laboratories for data generation homogeneity into a common data biobank for networked studies. As a component to establishing multi-site, multi-study features to molecular profiling studies, the TAGC scientific team and CMPH Data Science Core will established several cloud-based storage protocols and analytical pipelines for integrated genomics analysis to share primary data and analyzed results with team-selected investigators. The American Genome Center will implement a shared resource of educational documents and protocols for distribution to the research community, will evaluate applications, methodologies and platforms for single molecule sequencing and will facilitate the establishment of operational components parallel to clinical Production Sequencing compliance standards. These activities will directly address the medical, educational and research needs for genomic medicine initiatives at the university and for collaborative federal government and DoD partner laboratory sites. Recruitment of a Medical Geneticist, and other clinical research genetics personnel. These individuals will supplement existing key personnel. Specifically, the Clinical Implementation Division will improve variant interpretation and curation pipelines to support clinical genomic activities. In addition, ongoing research 					

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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>endeavors related to the use of genomic sequencing information in the DoD are beginning and will require support from CMPH clinical programs.</p> <p>5. Continue data collection and return of genetic results for the GEMini prospective clinical whole genome sudden cardiac arrest protocol.</p> <p>6. Achieve full capacity for the APOLLO Network APOLLO 5 study molecular profiling and data analysis requirements.</p> <p>Military Women’s Health Research Program (MWHRP) FY23 Goals:</p> <ul style="list-style-type: none"> - The creation of a USUHS women’s health tracking system and repository for all USUHS women's health research and evidence-based projects. - MWHRC will provide monthly reporting to the Health Affairs Women in Service Working Group meetings. <p>The Military Women’s Research Consortium expects to allot \$3.6M as \$1.2M FY23 RDT&E, \$1.2M FY24 RDT&E, and \$1.2M FY25 RDT&E appropriations to funds up to 3 Military Women’s Health Research Consortium Awards for the first year with continuing funding up to 3 years, subject to availability of funds. Continued funding is dependent upon assessments of performance based on factors including in-progress review and quarterly progress reports.</p> <p>The award will support translational research targeting specific Focus Areas of Military Women’s Health. Translational research is defined as work that “translates” basic science concepts and ideas into clinically relevant solutions and meaningful health outcomes with a view toward evaluating the feasibility of diagnostic and therapeutic techniques, clinical guidance, emerging approaches and technologies, promising new products, and/or pharmacologic agents.</p> <p>To meet the intent of this award mechanism, each research project must specifically address one or more of the Military Women’s Health Focus Areas identified by the VA/DOD Women’s Health Clinical Care Community and the HA Women in Service Working Group (WIS WG).</p> <p>IDCRP FY23-24 Goals:</p> <ul style="list-style-type: none"> - Ongoing and outyear analyses of EPICC, PASS, MRAP and PAIVED protocols, including: <ul style="list-style-type: none"> o Vaccine correlates of protection research (EPICC, PASS, PAIVED) o A comprehensive Long COVID research road map which includes predictive studies and mechanistic studies (EPICC, MRAP), with potential applications to clinical trial endpoint design. 					

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 506 / <i>Health Research for Improved Medical Readiness and Healthcare Delivery (USUHS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>o Ongoing integrated laboratory analyses on EPICC, PASS and PAIVED which will culminate in major mechanistic studies for influenza and SARS-CoV-2.</p> <p>o The MRAP study will provide rolling COVID-19 vaccine effectiveness estimates for ADSM as booster recommendations change and new variants circulate.</p> <p>- Complete enrollment and analysis of the two deployment RCTs (P2 and Treat TD 2.0) to support CPG requirements.</p> <p>- Newly established SSTI data and specimen repository protocol will leverage previously collected data and specimens from legacy SSTI protocols to conduct comprehensive analyses to support SSTI mitigation efforts in high-risk military populations.</p> <p>- Evaluate DoD Antimicrobial Stewardship Programs (ASP) on an enterprise level and provide a technical report on stewardship practices to the DoD ASP Working Group to inform process improvements within the DoD. The protocol is in direct support of a USUHS Public Health PhD thesis.</p> <p>- An acute respiratory infection (ARI) repository protocol – the IDCRP is currently planning a joint ARI protocol data and specimen repository protocol derived from the above and other ARI protocols. This will enable pooled subject level meta-analyses to answer current and emerging questions with improved statistical power, and allow pilot analyses and sample size calculations for new ARI protocols. This will further serve as critical resource for new assay development for future ARI pandemics which threaten Force Health.</p> <p>- Commence an augmented respiratory surveillance protocol at the US Naval Academy to inform ARI management and prevention in congregate military settings as a platform to rapidly characterize the epidemiology of emerging new respiratory infection threats (including new variants) and evaluate real world evidence for non-pharmaceutical interventions and licensed ARI medical countermeasures. This in turn will help inform practice guidelines for acute respiratory infections for service academies, training, and other congregate settings (inc. shipboard).</p> <p>FY 2024 Base Plans: CHSR FY 2024 Goals Continue Efforts as outlined in 2023, including:</p> <ul style="list-style-type: none"> • Racial Disparities across Top 10 Service Lines • Low Value Care in the MHS • Global Burden of Disease Study • Long Term Impacts of Military Health System Response to COVID-19: A Health Services Research Approach to Sustainable Process Improvements 					

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Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 506 / <i>Health Research for Improved Medical Readiness and Healthcare Delivery (USUHS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<ul style="list-style-type: none"> Capacity building through training and workshops Community building through the Health Services Research Interest Group and Value Based Care Journal Club Develop and sustain Data Coordination Center for USU and other researchers needing to work with MHS data sets. Continue to respond to high priority requests of DoD, MHS, interagency, and White House leaders. <p>CGHE FY 2024 Plans: CGHE has augmented and refined its GHERI grant distribution process in preparation for ostensible upcoming funding cycles. CGHE plans to maintain such readiness to rapidly deploy CCMD CGHE research priorities, scientific and programmatic review processes, and funding distribution mechanisms when authorized. Further, CGHE plans to hold and facilitate a CGHE research presentation and poster session at the upcoming 2023 MHSRS conference in Kissimmee, FL.</p> <p>CMPH FY2024 Goals: Continuation of FY23 Goals. MWHRP FY2024 Goals: Continuation of FY23 Goals. IDCRP FY2024 Goals: Continuation of FY23 Goals.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Price adjusted for inflation.</p>					
Accomplishments/Planned Programs Subtotals	11.022	11.631	11.883	0.000	11.883

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.

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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 0603115DHA / Medical Technology Development				Project (Number/Name) 507 / Brain Injury and Disease Prevention, Treatment and Research (USUHS)			
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
507: Brain Injury and Disease Prevention, Treatment and Research (USUHS)	26.900	13.378	14.132	14.415	0.000	14.415	14.703	14.997	15.297	15.603	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program supports drug discovery for chronic traumatic and encephalopathy/neurodegenerative disease.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Title: Brain Injury and Disease Prevention, Treatment and Research</p> <p>Description: Service members who have served in combat and have received repeated impact and/or blast TBIs are at risk for developing Chronic Traumatic Encephalopathy (CTE) and other neurodegenerative diseases with significant persistent behavioral/neurologic manifestations. Currently, there are no validated means for diagnosing these problems in living patients or drugs to prevent and treat them. The mission of our program is to develop drugs that will effectively block the formation of tau prions that can be entered into clinical trials for the prevention and/or treatment of CTE and other neurodegenerative disorders in at-risk active duty and retired service members. Using human brain specimens, CTE has been now shown to qualify as a transmissible tau prion disorder. To date, over 320,000 novel chemical compounds have been tested for their ability to interfere with in vitro tau prion formation. Several active compounds have been identified and using medicinal chemistry, we have attempted to improve their bioavailability and lower toxicity profiles. Such candidate drugs are now being tested for efficacy in animal models of tau prion disorders. Newly developed techniques to identify the presence of tau prions in brain samples have been developed and have now been shown to be efficient and highly sensitive.</p> <p>FY 2023 Plans: While the COVID-19 pandemic continues to constrain our pace of research, we plan to screen an additional 100,000 chemical compounds for potential effects of tau prion formation. Compounds identified with such properties will undergo medicinal chemistry analog studies to enhance biologic efficacy. The newly developed, highly sensitive tau prion assay techniques will be used on currently available and newly obtained human brain specimens and animal models to identify the presence, distribution and time-course of tau prion involvement of the brain. We will continue to further develop animal models which overexpress human tau and employ these for pathogenesis, infectivity and drug efficacy studies. Animal models to be actively investigated include Tg23027 mice, Tg12099 rats, hMAPT-KI mice, and ferrets. Further derivation of the Tg23027 mouse to</p>	13.378	14.132	14.415	0.000	14.415

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Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / Medical Technology Development	Project (Number/Name) 507 / Brain Injury and Disease Prevention, Treatment and Research (USUHS)

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>remove mouse tau isoforms and remove their impact from the propagation of human tau prions is ongoing. Using CryoEM compare the three-dimensional structures of CTE prions to conformations from other non-TBI tauopathies including Alzheimer’s Disease and Down Syndrome. Recognizing the realities of working in the COVID era, activities towards obtaining fresh frozen brain specimens from deceased Service Members who developed CTE will be cautiously expanded in order to provide additional isolates in order to expand our tau prion drug discovery program.</p> <p>FY 2024 Base Plans: Plans for FY2024 reflect a continuation of a multiyear effort to generate effective therapeutics and, as such, include many of the same ongoing activities from FY2023. We plan to screen an additional 100,000 chemical compounds for potential effects of tau prion formation. Compounds identified with such properties will undergo medicinal chemistry manipulation to enhance bioavailability and lessen toxicity profiles. To that end, we will synthesize and assay an average of 20 new designer inhibitors per week, for a total of 1,000 in the year. We will characterize drug-like properties of new analogs: we will test at least 450 new compounds for microsomal stability, 100 compounds for membrane permeability and assess the non-specific protein binding of another 250 through the course of the year. We will continue to further develop and utilize animal models which overexpress human tau and employ these for pathogenesis, infectivity and drug efficacy studies. High resolution Cryo-EM studies will proceed to create a model that further defines the specific atomic structure of tau prions related to CTE. Knowledge gained from this atomic structural model will be used as a selective template for screening the chemical compounds for their efficacy against CTE-related tau prion formation. We will identify a preclinical PET ligand for MSA prions to use in rodents. Correlate in vivo displacement of PET ligand to effective concentration of MSA drugs in the brains of rodent models.</p> <p>These research strategies align with the National Defense Strategy and MHS Strategic Goals & Objectives as articulated in the recently released Warfighter Brain Health Strategy & Action Plan (see page 9, “Develop medical countermeasures to reduce or eliminate long-term and/or late effects following TBI.”</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Price adjustment for inflation.</p>					
Accomplishments/Planned Programs Subtotals	13.378	14.132	14.415	0.000	14.415

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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 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 507 / <i>Brain Injury and Disease Prevention, Treatment and Research (USUHS)</i>
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.		

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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 0603115DHA / Medical Technology Development	Project (Number/Name) 508 / Psychological Health and Resilience (USUHS)
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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
508: Psychological Health and Resilience (USUHS)	14.140	7.042	7.428	7.577	0.000	7.577	7.729	7.884	8.042	8.203	Continuing	Continuing

A. Mission Description and Budget Item Justification

The “Psychological Health and Resilience” program at USUHS is designed to answer fundamental questions of importance to the military medical mission of the Department of Defense in the areas of prevention, treatment and recovery of warfighters and families in behavioral and mental health, which are critical to force health and readiness. Research is necessary to guide policy and ensure optimal delivery of behavioral health training and services across the continuum of care and deployment cycle. Threats addressed by this research component include post-traumatic stress disorder (PTSD), suicide, family separation, and family violence.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Psychological Health and Resilience	7.042	7.428	7.577	0.000	7.577
Description: STARRS-LS, the longitudinal successor studies to the groundbreaking Army STARRS research studies conducted from 2009 to 2015, includes the largest studies of military suicidal behaviors ever undertaken. In addition, STARRS studies have yielded a wealth of information about a variety of other health issues relevant to the military. STARRS-LS seeks to expand and extend the original research effort by continuing to follow cohorts comprised of the original participants, including expanding the Historical Administrative Data Study to include more than 3 million active-duty Soldiers from 2004 to 2019. STARRS-LS uses Big Data techniques and predictive analytics to develop knowledge that allow the Army and DoD to develop products from the knowledge. The volume, breadth and depth of the data compiled for large representative samples of Soldiers, and the unique combination of survey data, health outcome data, and genetic data, allow extensive state-of-the-art analyses. Because the data are available at the Army Analytics Group (AAG) Research Facilitation Laboratory (RFL), analytic opportunities are available for researchers other than the STARRS Research Team.					
The STARRS Research Team meets, presents findings, and shares ideas regularly with DoD and Army representatives who serve on the STARRS Government Steering Committee (includes representation from ASD-HA, Sec of Army, Army SG), the STARRS Research Advisory Team, DSPO and other groups to ensure that the STARRS research aligns with current DoD/DHP priorities. The STARRS Research Team has published 115 papers in peer-reviewed scientific journals so far. The 2021 U.S. White House strategy report on reducing military and veteran suicide described STARRS as “one of the most notable research efforts to understand risk for suicide in military and veteran populations.					
FY 2023 Plans:					

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
In addition to the primary achievement of research objectives, the program educates Federal employees as a benefit to the public they serve through Federal service, through support to civil authorities, and in non-Federal professional and academic collaborations. FY 2024 Base Plans: Continue efforts as outlined in FY 2023. FY 2024 OCO Plans: N/A FY 2023 to FY 2024 Increase/Decrease Statement: Price adjustment for inflation.					
Accomplishments/Planned Programs Subtotals	7.042	7.428	7.577	0.000	7.577

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.

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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 0603115DHA / Medical Technology Development				Project (Number/Name) 509 / Innovative Technologies for Improved Medical Diagnoses, Rehabilitation and Warfighter Readiness (USUHS)			
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
509: Innovative Technologies for Improved Medical Diagnoses, Rehabilitation and Warfighter Readiness (USUHS)	33.033	13.623	14.505	14.916	0.000	14.916	15.333	15.638	15.951	16.272	Continuing	Continuing

A. Mission Description and Budget Item Justification

The “Innovative Technologies for Improved Medical Diagnoses, Rehabilitation and Warfighter Readiness” program at USUHS is designed to answer fundamental questions of importance to the military medical mission of the Department of Defense in the three portfolio areas: Transforming Technology for the Warfighter (TTW), Surgical Critical Care, and the Rehabilitation Sciences Research.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Innovative Technologies for Improved Medical Diagnoses, Rehabilitation and Warfighter Readiness	13.623	14.505	14.916	0.000	14.916
Description: The “Innovative Technologies for Improved Medical Diagnoses, Rehabilitation and Warfighter Readiness” program at USUHS is designed to answer fundamental questions of importance to the military medical mission of the Department of Defense in the three portfolio areas: Transforming Technology for the Warfighter (TTW), Surgical Critical Care, and the Rehabilitation Sciences Research.					
Portfolio 1: The Transforming Technology for the Warfighter (TTW) program supports USUHS partnerships with other DoD biomedical labs, civilian universities and medical centers (including minority serving institutions), and the National Institutes of Health to advance and deliver new technologies to improve warfighter health and readiness. Research projects, which focus primarily on the Combat Casualty Care, Military Operational Medicine, and Clinical and Rehabilitative Medicine defense medical R&D areas of interest, are selected based on scientific peer review and programmatic review with an emphasis on direct relevance to identified military needs, translational potential, and clear strategy for product commercialization. Specifically, the program aims to advance Technology Readiness Level (TRL) 3 projects to TRL 4/5/6 within a maximum of three (3) to five (5) year performance period. Although the program is built around the needs of the warfighter, it also advances civilian care by supporting projects that benefit both the warfighter and the general public. The TTW program fully supports the DoD’s Joint Capabilities Integration and Development System (JCIDS) and continually works to link projects to DoD requirements documents, including the 2008 Initial Capability Documents (ICD) for Military Operational Medicine, the 2014 ICD for Combat Casualty Care (CCC) Devices and Products, the 2015					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency		Date: March 2023
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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>ICD for CCC Training Technologies, the 2015 ICD for CCC Medical R&D, and the 2017 ICD for Clinical and Rehabilitative Medicine.</p> <p>Portfolio 2: The Surgical Critical Care Initiative (SC2i), a consortium of 7 institutions (USU, Henry M. Jackson Foundation for the Advancement of Military Medicine, NMRC, Duke, Emory, DecisionQ), enrolls critically ill patients (as well as healthy controls), leveraging medical and multi-omics data to develop Clinical Decision Support Tools (CDSTs) that will improve clinical outcomes and lower resource utilization across military and civilian healthcare systems. The CDSTs will further assist readiness by either accelerating return to duty (abridged length-of-stay across the ICU, general ward, and rehabilitation continuum of care) and curbing medical resource burdens. The SC2i also collaborates with the Lawrence Livermore National Laboratory, University of Pittsburgh, University of South Florida, Brooke Army Medical Center, University of Vermont, among others. Through collecting patient specimens, laboratory testing, microbial analytics, and data modeling, our CDSTs will augment individual precision medicine, decrease the Warfighter’s healing time, and accelerate their return to readiness. The SC2i is transforming patient data into actionable information, improving diagnosis in healthcare, and reducing the cost of care through early detection of surgical complications.</p> <p>Our current focus is on 3 CDSTs to aid in advanced Sepsis prediction, timing of wound closure, and early detections of pneumonia, bacteremia, and venous thromboembolism. The AIDEx (Sepsis and other Decompensation) tool will be launched into the BAMC in FY23, with use in nine other military medical facilities within the year following. Additionally, the SC2i is working with the Office of Regulated activities to develop a regulatory strategy for the AIDEx tool for the FDA using a predicate 510(k) pathway. This tool aims to predict sepsis 6-12 hours prior to onset. The WounDx CDST should be in place prior to FY27 in multiple MHS and civilian facilities. WounDx addresses an unmet clinical need of uncertainty in the timing of wound closure; additionally, it will lessen the number of dehiscenced wounds, which occur in an approximately 15-30% of wounded warriors.</p> <p>Other CSDTs include diagnosis of acute kidney injury, severe traumatic brain injury, acute respiratory distress syndrome, open abdomen infections, appendicitis, heterotopic ossification, and snakebite recovery. We have 2 CDSTs currently in use in the MHS or civilian hospitals: Invasive Fungal Infection, which is used to detect patients at increased risk of fungal infections, as well as the Massive Transfusion Protocol app to identify when such is needed in trauma patients. The MTP app has been further adapted for use in Role 1 / 2 care settings and is undergoing external validations in partnership with ARA and MTEC.</p> <p>Potential cost savings (2018 internal business case analysis) through the use of seven of our CDSTs is estimated at \$10B annually for the US healthcare system, and \$110M annually for the US military health system.</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency		Date: March 2023
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Other SC2i work includes USUHS Department of Surgery student engagement and the generation and dissemination of knowledge products throughout the civilian and medical communities. Recruitment to date is approximately 3,300 patients; 7,600 laboratory samples, and 62 million data points.</p> <p>Portfolio 3: The Center for Rehabilitation Sciences Research (CRSR) supports clinical and translational research efforts dedicated to enhancing the rehabilitative care of the wounded warrior, particularly those with orthopedic trauma, amputation and neurological injury. Research focus areas include: 1) Identifying and mitigating barriers to successful rehabilitation, return to duty and community reintegration; 2) Improved pain management to support active participation in rehabilitation; 3) Applying Advanced Technologies to augment rehabilitation methods and outcomes assessments; 4) Developing and testing advanced technologies to restore individual functional independence; 5) Regenerative Rehabilitation translational products for war-related trauma. Musculoskeletal injuries (MSKI) are the largest source of disability in the military and affect 800,000 Service Members annually, accounting for 25 million days of limited duty. Most concerning, the disability discharge rate for MSKI has increased 13x between 1981 and 2005 (70 vs. 950 per 100,000 persons), and these trends have continued to increase in the Department of Defense (DoD) and Veterans Affairs Administration in the most recent decade. The Defense Health Agency recognized this unmet clinical/operational gap and funded the formation of the Musculoskeletal Injury Rehabilitation Research for Operational Readiness (MIRROR) organization in 2019.</p> <p>In the past three years since our inception, MIRROR has established a world-class infrastructure (data, regulatory, governance) that is compliant with the DoD for conducting research, expanded the number of studies from 14 to 40, formed partnerships with 24 military and academic centers, received \$65 million in grant funding, hosted 5 educational symposiums, generated 19 Post-Operative Rehabilitation Protocols to standardized care across the Tri-Service, and published 82 abstracts and peer-reviewed publications. Since then, our enrollment across all studies is approximately 5,100 subjects. Moving forward, we plan to execute on our current projects and continue to provide value through: (1) research and operational support to new military treatment facilities, (2) closing critical care injury/pain gaps (e.g., spine, knee, ankle, shoulder), (3) evaluating novel imaging modalities (e.g., elastography), (4) performing sub analyses to understand gender disparities, predisposition to injury, response to treatments, etc. MIRROR was also selected to host a 3-hour session at MHSRS 2022. The Photomedicine to Enhance Military Readiness program is a four-year, \$22 million initiative with the Wellman Institute, The Geneva Foundation, HJF, and Spaulding Rehabilitation that supports JPCs 5, 6 and 8. These teams are executing 15 clinical and translational research projects to deliver optimal dosimetry of photobiological therapy to enhance performance, reduce the potential for MSKI, assist with nerve graft healing, enhance</p>					

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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>audiology function, etc. Projects are progressing and in various stages of device development, benchtop research, and regulatory review [Institutional Review Board (IRB) approval for clinical trials and Institutional Care and Use Committee (IACUC) approval for animal research].</p> <p>In addition to these clinical and translational research projects, CRSR continues to provide leadership and coordination of the Military Treatment Facility Engagement Committee (MTFEC) within the Pain Management Collaboratory (PMC) Coordinating Center (PMC3), which is an \$81 million inter-agency initiative to support a multi-component research effort focused on non-pharmacological approaches for pain management supporting JPCs 6 and 8. Four ongoing pragmatic trials studying non-pharmacological approaches to pain for military service members and veterans continue, expanding to one additional performance site. A one-hour session at MHSRS 2022 titled, 'Novel Interventions for Non-pharmacological Pain Management,' was moderated by DoD representative and MTFEC member, Dr. Henry Nothnagel. To continue conversations among VA, DoD, and DHA members, a cross-collaboration working group has been established to discuss policies and procedures to enhance clinical research execution within the DoD.</p> <p>CRSR has been a leader in the 30-institution NCAA-DoD Concussion Assessment, Research and Education (CARE) Consortium, which includes the Service Academy Longitudinal TBI Outcomes Study (SALTOS). To date, recruitment totals over 53,000 participants, including more than 23,000 Service Academy cadets and midshipmen, with just over 6,700 recorded concussions, making this the largest study of its kind on the natural history and neurobiology of concussion. Thus far in FY22, 15 manuscripts have been published and 23 presentations have been completed to disseminate important findings from this cohort. Additional funding has been secured, totaling \$42.65 million for the longitudinal continuation study, CARE-SALTOS Integrated (CSI). Stand-up of CSI, which will follow cadets, midshipmen, and NCAA athletes post-graduation to determine intermediate and long-term impacts of concussion on health and military service, is currently underway at five military sites, and over 500 military participants have completed Tier 1 of CSI.</p> <p>FY 2023 Plans: TTW FY2023 Plans: Intranasal Delivery of Ketamine for PTSD: A TTW-funded project at Boston University exploring the use of mucoadhesive intranasal Ketamine particles for the treatment of PTSD demonstrated efficacy of a new polysaccharide biomaterial that has potential to overcome the limitations of low-dose ketamine. The TTW program will fund a follow-on project to be conducted in collaboration with Dr. Caroline Browne at USUHS to evaluate the pharmacokinetics and anti-nociceptive effects of these ketamine-loaded synthetic particles in</p>					

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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>an animal model. This preclinical work will aid in further development and validation of a safe, noninvasive, prolonged-release intranasal vehicle for the delivery of Ketamine as a treatment for PTSD.</p> <p>Photo-biomodulation for Pain Control (follow-on): As outlined above, the TTW program is providing additional funding for Dr. Anders's photo-biomodulation technology previously developed under TTW using Micro Needle Array (MNA) technology to build and validate a prototype battery-powered pain blocking device in an in-vivo large animal model.</p> <p>SC2i FY2023 Plans: WoundX Clinical Decision Support Tool (CDST): Improve clinical outcomes and cost savings by addressing unmet clinical needs for the timing of wound closure. This research will be completed through the processes of obtaining an Investigational Device Exemption and conducting an FDA clinical trial, demonstrating the safety and efficacy of the WoundX CDST. Elevate military readiness by returning wounded warriors to the battlefield, and reducing the cognitive burden of surgeons responding to multi-domain operations. Minimize loss of life and limb in deployed field hospitals and definitive care facilities; minimize battle casualty morbidity and mortality. This project supplements the SC2i mission of improved clinical outcomes at lower costs, through creating clinical decision support tools that focus clinicians on the best choices for each patient. Annual SC2i Core funding supports the initiation of this research; we are seeking funding to extend our research through an IDE/FDA trial, making our tool ready for use in both military and civilian institutions. Implementation will continue for our Sepsis prediction CDST (AISE/AIDEx) integration into one or two military health facilities. A pilot study will be initiated. Will continue to work with DHA to develop best clinical workflow and perform model retraining for specific MTFs involved in the pilot. Our Massive Transfusion protocol will continue to be tested in our Consortium partner hospitals (Duke and Emory), with the goal of deploying the tool into the military health system. Continue supporting education and research initiatives with USUHS UME and GME students, as well as clinical researchers across the DoD.</p> <p>CRSR FY2023 Plans:</p> <ul style="list-style-type: none"> • FY23 award executed with the Uniformed Services University of the Health Sciences (USUHS) and funds received September 2022 for additional POM funding to support the continuation of CRSR. • Anticipated completion and analysis of results from the Service Dog Training Program study, Big Dog, as well as from a study assessing transcranial magnetic stimulation for mild traumatic brain injury (mTBI) and post-traumatic stress disorder, among other multi-year studies in the CRSR portfolio. 					

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<ul style="list-style-type: none"> • SALTOS will continue data collection through the 2022/2023 academic year at three military service academies. • CSI will continue Tier 1 electronic survey recruitment, initiate Tier 2 in-person recruitment, and stand-up the Tier 3 data repository merging research data with military health records. • Commencement of at least seven new research protocols, which were in development and approval phases during FY22. • Development of publications and presentations resulting from the completion of various studies aforementioned. • Four additional proposals in development and/or submission stages, in which a number of CRSR personnel are Principal Investigators, to include: <ul style="list-style-type: none"> • (1) AMTI proposal in for \$150,000 for 1 year; a QI/PI project to evaluate the impact of 3D scanning and printing in reducing production time and patient satisfaction of prosthetics. • (2) Full proposal of \$250,000 over two years submitted to CPMRP to assess the efficacy of PRTMS treatment in reducing pain among MHS beneficiaries who are receiving standard of care therapy for chronic neck pain at WRNMMC. • (3,4) Collaborating with MN for multi-year studies via the MDO funding mechanism: “Oculomotor function as an early neurophysiologic marker in concussion and blast exposure” and “Biomarkers of neuropathic pain and neuroinflammation for individuals with spinal cord injury” <p>FY 2024 Base Plans: TTW FY24 Plans: Continue efforts as outlined in FY 2023.</p> <p>SC2i FY24 Plans: Build our TripleDx CDST to predict Venous Thromboembolism (VTE), Pneumonia, and Acute Kidney Injury (AKI) in the clinical setting to allow clinicians to intervene and fine tune treatment to benefit patient care. Continue with discovery work around the inflammatory processes involved in snake bite and envenomation and recovery. Complete statistical modeling, design software, and evaluate in a clinical trial setting. Continue WoundX clinical trial (from above).</p> <p>CRSR FY24 Plans: Continue efforts as outlined in FY 2023.</p> <p>FY 2024 OCO Plans:</p>					

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A					
<i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Price adjustments for inflation.					
Accomplishments/Planned Programs Subtotals	13.623	14.505	14.916	0.000	14.916

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.

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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 0603115DHA / <i>Medical Technology Development</i>				Project (Number/Name) 511 / <i>Cancer Moonshot Initiatives</i>			
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
511: <i>Cancer Moonshot Initiatives</i>	0.000	0.000	12.300	12.500	0.000	12.500	12.800	13.100	13.400	13.668	Continuing	Continuing

Note

This Project overall is a new start in FY 2023 and all elements of this new Project are new and novel in support of the DoD aspect of the federal Cancer Moonshot 2 initiative mandated by the White House in February 2022.

A. Mission Description and Budget Item Justification

DoD Cancer Moonshot 2 (CM2) is a mission assigned by the DoD to USUHS Murtha Cancer Center Research Program (MCCRP) as a mandate from the White House's federal Cancer Moonshot part 2 (CM2) that was initiated in February 2022. CM2 is the next generation of the original federal cancer moonshot program initiated in 2016, for which the MCCRP is actively engaged in ongoing cancer studies. The DoD CM2 program is a new initiative with new translational research projects but can and will leverage the findings and capabilities that MCCRP has developed from the cancer moonshot 2016 program. In CM2, MCCRP will leverage DoD's unique and additional capabilities to contribute to advancement of the seven priority areas of CM2 as designated by the White House. The MCCRP's three new initiatives under the CM2 for DoD include: 1) Cancer Research and Clinical Trial Network; 2) Data Analytics (Integrated and pan-omic) and Molecular Cancer Epidemiology; and 3) DoD Serum Repository Projects surrounding environmental and toxin exposures in service members.

B. Accomplishments/Planned Programs (\$ in Millions)

Title: Cancer Moonshot Initiatives	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Description: There are three new research areas developed for this new Project under the Cancer Moonshot 2 (CM2) for DoD through USUHS MCCRP: 1) Cancer Research and Clinical Trial Network; 2) Data Analytics and Molecular Cancer Epidemiology; and 3) Environmental Exposures and Toxins in Military / DoD Serum Repository Projects. These three new initiatives will address the federal government / White House's seven stated goals for Cancer Moonshot 2 which are: to diagnose cancer sooner; to prevent cancer; to address inequities; to target the right treatments to the right patients; to speed progress against the most deadly and rare cancers including childhood cancers; to support patients, caregivers, and survivors; and to learn from all patients. Under these seven new pillars for CM2, the two overall goals per the White House for Cancer Moonshot 2 is to decrease the cancer death rate from cancer by 50% over the next 25 years, and to improve the experience of people and their families living with and surviving cancer. Our DoD Cancer Moonshot 2 initiatives are specifically developed and precisely aligned to address the overall CM2 seven pillars and two goals within the DoD health care system along with our federal partners. MCCRP focus of these projects is for active duty, veterans, and beneficiaries at risk for or with cancer. However, the initiatives and findings will have impact for the nation as a whole as part of the larger national Cancer Moonshot 2.	0.000	12.300	12.500	0.000	12.500

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Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / <i>Medical Technology Development</i>	Project (Number/Name) 511 / <i>Cancer Moonshot Initiatives</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p><i>FY 2023 Plans:</i> There are three new research areas developed for this new Project under the Cancer Moonshot 2 (CM2) for DoD through USUHS MCCRCP: 1) Cancer Research and Clinical Trial Network; 2) Data Analytics (Integrated and pan-omic) and Molecular Cancer Epidemiology; and 3) DoD Serum Repository Projects surrounding environmental and toxin exposures in servicemembers. These three new initiatives will address the federal government / White House’s seven stated goals for Cancer Moonshot 2 which are: to diagnose cancer sooner; to prevent cancer; to address inequities; to target the right treatments to the right patients; to speed progress against the most deadly and rare cancers including childhood cancers; to support patients, caregivers, and survivors; and to learn from all patients. Under these seven new pillars for CM2, the two overall goals per the White House for Cancer Moonshot 2 is to decrease the cancer death rate from cancer by 50% over the next 25 years, and to improve the experience of people and their families living with and surviving cancer. Our DoD Cancer Moonshot 2 initiatives are specifically developed and precisely aligned to address the overall CM2 seven pillars and two goals within the DoD health care system along with our federal partners. MCCRCP focus of these projects is for active duty, veterans, and beneficiaries at risk for or with cancer. However, the initiatives and findings will have impact for the nation as part of the larger national Cancer Moonshot 2.</p> <p>There are three new projects under the Cancer Moonshot 2 (CM2) for DoD through USUHS MCCRCP: 1) Cancer Research and Clinical Trial Network; 2) Data Analytics (Integrated and pan-omic) and Molecular Cancer Epidemiology; and 3) DoD Serum Repository and Tissue/Data Projects surrounding environmental and toxin exposures in service members. The base plans for each of the three are as follows: 1) Cancer Research and Clinical Trial Network: Herein referred to as “the Network”, this is the foundational element of CM2 as it provides the link between the research protocols, studies, clinical trials, and the patients who need equitable access to them. It is axiomatic that the best treatment for cancer patients is a clinical trial. Despite knowing that, less than 10% of all cancer patients are enrolled in a clinical trial and there are known inequities with regards to lack of diversity in clinical trial enrollment across the nation. While MCCRCP has done some limited engagement in this area across the DoD and other federal hospitals for our active duty, retirees, veterans, and beneficiaries with cancer, this Task #1 will enable the full build-out, completed development, and actualization of the vast potential of the DoD health care system and its hospitals as well as partner federal facilities into a fully functional and integrated military / veterans cancer clinical trials and research network. MCCRCP will fully enable, staff, and support the network at DHA / DoD hospitals/medical centers and VHA facilities as well as partner sites and will enable and support the implementation and running of cancer research</p>					

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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>and trials across the network that have significance and relevance to the specific needs of the active duty and veteran populations with a focus on Readiness preservation.</p> <p>2) Data Analytics (Integrated and pan-omic) and Molecular Cancer Epidemiology: Herein referred to as “Data”, this project element of CM2 is needed in order to maximize the existing and to-be-developed multiple and disparate data streams that have been or are being developed from both CM1 and CM2 research and translational studies. Additionally, the CM2 Data project will enable the storage (cloud-based; on-site servers; other requirements) of the huge data files that have been, are being, and will be developed as part of all CM activities past, present, and future. Furthermore, the CM2 Data project will develop through partnerships and in-house development, the capability to utilize Machine Learning and Artificial Intelligence and other types of novel “big data” analytic tools in order to maximize the knowledge gained from the large and disparate data sets that our DoD CM1 and CM2 research projects have created and are creating. These large “big data” sets are exemplified but not limited to complex proteogenomic data, other multi-omics (eg. lipidomics, metabolomics, methylation, circulating DNA, others), clinical data, outcomes data of all types, tumor registry data, DHA / DoD / MCCRCP datasets, radiomics data, patient reported outcomes data, and all other developed or existing data sets of any relevant type. Murtha DoD CM2 Data project will also ingest and incorporate for analysis any and all relevant intramural and extramural data sets of any and all types both existing and under development when available.</p> <p>3) DoD Serum Repository and Tissue/Data Projects surrounding environmental and toxin exposures in service members: Herein referred to and subsequently identified as “PROMETHEUS”, PROject for Military Exposures and Toxin History Evaluation in US servicemembers, is a unique first-in-class research project that takes any and all available relevant biospecimens, data, exposure history, and expertise both intramural and extramural to operationalize robust molecularly-based inquiries into the complex questions and issues surrounding the putative roles of environmental exposures, toxin exposures, and military-specific job requirements into the risk for and development of cancers or pre-cancerous conditions in active duty service members, retired service members, and veteran service members. PROMETHEUS will be intended to develop predictive capabilities, associations, and causality knowledge to allow for “Forethinker” predictive-in-advance abilities of what types of the above exposures and toxins may be mitigated, controlled, or avoided in order to better preserve the Readiness of the Total Force. This project will utilize and ingest any and all available DoD- and VA-level data sets (eg. ONCOLOG; ILER; MilCanEpi; M2; TRICARE; other), liquid and solid biospecimens and tumors to include from the AFHSD’s DoD Serum Repository, MCCRCP biobanks, and any other DoD-funded or available biospecimens and data sets. PROMETHEUS will partner with government and non-government experts in this field to ensure development of best-in-class research utilizing these unique, vast data and biospecimen sets across multiple molecular analytic labs and processes both governmental and non-governmental (to include</p>					

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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
but not limited to civilian, university, and corporate molecular capabilities). The intake will include substrate on exposures, toxins, environment, blood, serum, tissues, and other data, and the outputs will include molecular and biologic pathways, correlations and causations, mechanisms, knowledge, and prevention opportunities. Clinical Practice Guidelines and Knowledge/Materiel Products will be additional expected deliverables. FY 2024 Base Plans: FY 2024 plans continue efforts outlined in FY 2023. FY 2024 OCO Plans: N/A FY 2023 to FY 2024 Increase/Decrease Statement: Price adjustments for inflation.					
Accomplishments/Planned Programs Subtotals	0.000	12.300	12.500	0.000	12.500
	FY 2022	FY 2023			
Congressional Add: Cancer Moonshot Initiatives (USUHS) 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

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.