OFFICE OF THE UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

PERSONNEL AND
READINESS

The Honorable Jon Tester
Chairman
Subcommittee on Defense
Committee on Appropriations
United States Senate
Washington, DC 20510

APR 18 2024

Dear Mr. Chairman:

The Department's response to the Joint Explanatory Statement, page 147, accompanying H.R. 2471, the Consolidated Appropriations Act, 2022 (Public Law 117–103), "Joint Warfighter Medical Research Program," is enclosed.

The report summarizes the projects selected for Fiscal Year (FY) 2022 Joint Warfighter Medical Research Program (JWMRP) funding and covers the total congressional appropriations for the JWMRP during this period ($40 million). The FY 2022 JWMRP funded 16 projects, aligned under the Science and Technology or Advanced Development project domains, which collectively address medical research areas aligned with Defense Health Program core programs. This diverse set of JWMRP projects enhances and accelerates high-priority Department of Defense and Military Department medical requirements, with potential to provide significant benefits to military medicine.

Thank you for your continued strong support for the health and well-being of our Service members, veterans, and their families. I am sending similar letters to the other congressional defense committees.

Sincerely,

[redacted]

Ashish S. Vazirani
Performing the Duties of the Under Secretary of
Defense for Personnel and Readiness

Enclosure:
As stated

The Honorable Susan Collins
Ranking Member

[redacted]

OFFICE OF THE UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

PERSONNEL AND READINESS

The Honorable Ken Calvert
Chairman
Subcommittee on Defense
Committee on Appropriations
U.S. House of Representatives
Washington, DC 20515

APR 1 8 2024

Dear Mr. Chairman:

The Department's response to the Joint Explanatory Statement, page 147, accompanying H.R. 2471, the Consolidated Appropriations Act, 2022 (Public Law 117–103), "Joint Warfighter Medical Research Program," is enclosed.

The report summarizes the projects selected for Fiscal Year (FY) 2022 Joint Warfighter Medical Research Program (JWMRP) funding and covers the total congressional appropriations for the JWMRP during this period ($40 million). The FY 2022 JWMRP funded 16 projects, aligned under the Science and Technology or Advanced Development project domains, which collectively address medical research areas aligned with Defense Health Program core programs. This diverse set of JWMRP projects enhances and accelerates high-priority Department of Defense and Military Department medical requirements, with potential to provide significant benefits to military medicine.

Thank you for your continued strong support for the health and well-being of our Service members, veterans, and their families. I am sending similar letters to the other congressional defense committees.

Sincerely,

[redacted]

Ashish S. Vazirani
Performing the Duties of the Under Secretary of Defense for Personnel and Readiness

Enclosure:
As stated

cc:
The Honorable Betty McCollum
Ranking Member

[redacted]

OFFICE OF THE UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

PERSONNEL AND
READINESS

The Honorable Jack Reed
Chairman
Committee on Armed Services
United States Senate
Washington, DC 20510

APR 18 2024

Dear Mr. Chairman:

The Department's response to the Joint Explanatory Statement, page 147, accompanying H.R. 2471, the Consolidated Appropriations Act, 2022 (Public Law 117–103), "Joint Warfighter Medical Research Program," is enclosed.

The report summarizes the projects selected for Fiscal Year (FY) 2022 Joint Warfighter Medical Research Program (JWMRP) funding and covers the total congressional appropriations for the JWMRP during this period ($40 million). The FY 2022 JWMRP funded 16 projects, aligned under the Science and Technology or Advanced Development project domains, which collectively address medical research areas aligned with Defense Health Program core programs. This diverse set of JWMRP projects enhances and accelerates high-priority Department of Defense and Military Department medical requirements, with potential to provide significant benefits to military medicine.

Thank you for your continued strong support for the health and well-being of our Service members, veterans, and their families. I am sending similar letters to the other congressional defense committees.

Sincerely,

[redacted]

Ashish S. Vazirani
Performing the Duties of the Under Secretary of
Defense for Personnel and Readiness

Enclosure:
As stated

cc:
The Honorable Roger F. Wicker
Ranking Member

[redacted]

OFFICE OF THE UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

PERSONNEL AND
READINESS

The Honorable Mike D. Rogers
Chairman
Committee on Armed Services
U.S. House of Representatives
Washington, DC 20515

APR 18 2024

Dear Mr. Chairman:

The Department's response to the Joint Explanatory Statement, page 147, accompanying H.R. 2471, the Consolidated Appropriations Act, 2022 (Public Law 117–103), "Joint Warfighter Medical Research Program," is enclosed.

The report summarizes the projects selected for Fiscal Year (FY) 2022 Joint Warfighter Medical Research Program (JWMRP) funding and covers the total congressional appropriations for the JWMRP during this period ($40 million). The FY 2022 JWMRP funded 16 projects, aligned under the Science and Technology or Advanced Development project domains, which collectively address medical research areas aligned with Defense Health Program core programs. This diverse set of JWMRP projects enhances and accelerates high-priority Department of Defense and Military Department medical requirements, with potential to provide significant benefits to military medicine.

Thank you for your continued strong support for the health and well-being of our Service members, veterans, and their families. I am sending similar letters to the other congressional defense committees.

Sincerely,

[redacted]

Ashish S. Vazirani
Performing the Duties of the Under Secretary of
Defense for Personnel and Readiness

Enclosure:
As stated

cc:
The Honorable Adam Smith
Ranking Member

[redacted]

Report to the Congressional Defense Committees

Joint Warfighter Medical Research Program

April 2024

The estimated cost of this report for the Department of Defense (DoD) is approximately $2,400.00 for Fiscal Years 2023–2024. This includes $500.00 in expenses and $1,900.00 in DoD labor.

Generated on October 31, 2023

RefID: E-8432EE0

BACKGROUND AND PURPOSE

This report is in response to the Joint Explanatory Statement, page 147, accompanying H.R. 2471, the Consolidated Appropriations Act, 2022 (Public Law 117–103), which requests that the Assistant Secretary of Defense for Health Affairs submit a report to the congressional defense committees on the Joint Warfighter Medical Research Program (JWMRP). This report lists the projects that receive funding, including the funding amount awarded to each project, a thorough description of each project's research, and the benefit this research will provide to the Department of Defense (DoD).

As requested by the Office of the Assistant Secretary of Defense for Health Affairs, the Defense Health Agency manages the Defense Health Program (DHP) Research, Development, Test, and Evaluation (RDT&E) appropriation. The U.S. Army Medical Research and Development Command (USAMRDC) Congressionally Directed Medical Research Programs (CDMRP) provides execution management for the DHP RDT&E JWMRP Congressional Special Interest funds.

FISCAL YEAR 2022 JWMRP RESEARCH

Congress appropriated $40 million for the JWMRP in Fiscal Year (FY) 2022, stipulating these funds "shall be used to augment and accelerate high priority DoD and Service medical requirements and to continue core and congressionally-directed prior year initiatives that are close to achieving their objectives and yielding a benefit to military medicine. The funds shall not be used for new projects or basic research."

Table 1 provides the total number of FY 2022 JWMRP funded projects, including the investment amount per the two project domains: Science and Technology and Advanced Development. The Department allocated the remaining $3,403,570 of the FY 2022 appropriation to Small Business Innovative Research (SBIR)/Small Business Technology Transfer Program (STTR) withholds ($1,335,000), USAMRDC withholds ($773,300), and CDMRP management costs ($1,295,270).

Table 1. FY 2022 JWMRP Funding Summary

PROJECT DOMAINS*	PROJECTS FUNDED	JWMRP INVESTMENT
Science and Technology	10	$22,096,430
Advanced Development	6	$14,500,000
Less: SBIR/STTR	N/A	($1,335,000)
Less: USAMRDC Withholds	N/A	($773,300)
Less: CDMRP Management Costs	N/A	($1,295,270)
Totals	**16**	**$36,596,430**

*Science and Technology focuses on the development and maturation of technologies to enable transformational capabilities and accelerate transition into Advanced Development. Advanced

Development centers on advanced component and prototype development for technologies with demonstrated proof of concept and an established transition pathway.

Table 2 summarizes the projects funded by the FY 2022 JWMRP, including the research award recipients, project descriptions with explanations of their potential benefits to the DoD, and funding amounts. The JWMRP funding amount was provided to the prime recipient organization, unless otherwise noted.

Table 2. FY 2022 JWMRP Project Summaries

NO.	PROJECT TITLE	RECIPIENT	PROJECT DESCRIPTION AND DoD BENEFIT	JWMRP FUNDING AMOUNT
1.	Quantification of Cervical and Lumbar Spine Kinematics and Muscle Physiology in Swift Boat Combatant Commands	Naval Health Research Center (NHRC), San Diego, CA	Project Description: *Science and Technology*/Combatant craft crewmen operate high-performance watercraft on missions aimed at unconventional warfare, special reconnaissance, direct action, and counter terrorism. Exposure to extreme and varied gravitational forces during these missions affects musculoskeletal structure, increasing risk of injury and reduced physicality. This ongoing extension effort aims to apply novel magnetic resonance imaging (MRI) techniques to understand the effect of high-speed maritime transits on both cervical spine (CS) and lumbar spine (LS) structure and supporting musculature. Information gathered could lead to physical training strategies to increase muscular strength and endurance in critical muscle groups that support the spine under the dynamic impact imposed by this operational environment. Relative to operational readiness and injury rates, these data may shed light onto measurable changes in the CS/LS, which may predict injury. DoD Benefit: In the long term, these data may provide information to prevent future injury, either through changes in training practices, gear design, and/or implementation of exercises to strengthen the musculature of the spine.	$81,000[*] (Sent to the NHRC in support of this effort).

NO.	PROJECT TITLE	RECIPIENT	PROJECT DESCRIPTION AND DoD BENEFIT	JWMRP FUNDING AMOUNT
2.	Phase 1 Clinical Trial for Therapeutic Intervention Particles (TIPs)	J. David Gladstone Institutes, San Francisco, CA	Project Description: *Science and Technology*/Despite the success of antiretroviral therapy for human immunodeficiency virus (HIV)-1, 1.7 million people acquired HIV in 2019. The Department of Veterans Affairs (VA) is the largest single provider of HIV-1 care in the United States with approximately 31,000 HIV-infected veterans (1 in 250 veterans living with HIV as of 2019). The cost of providing lifelong continuous antiviral therapy is projected to increase to an estimated $31 billion per year before 2030. A need exists for new therapeutic approaches that do not rely on continuous administration, particularly for resource-limited settings and at-risk populations facing treatment adherence challenges. This project will accelerate the development of a first-in-class biologic therapeutic candidate for HIV-1 termed TIPs by focusing on testing their safety (i.e., tolerability and immunogenicity). If successful, these studies will lead to a follow-on Phase Ib/IIa clinical intervention trial to test TIPs efficacy in sustainably lowering HIV-1 viral loads among HIV positive healthy individuals. DoD Benefit: As a single-administration therapeutic for HIV-1, TIPs would substantially improve the quality of life for HIV-infected military personnel, veterans, and their caregivers; reduce the burden of treatments that require VA and Military Health System administration, and significantly reduce the overall incidence of new HIV infections in the United States.	$1,549,069

NO.	PROJECT TITLE	RECIPIENT	PROJECT DESCRIPTION AND DoD BENEFIT	JWMRP FUNDING AMOUNT
3.	The Effects of Vibration on Indicators of Post-Traumatic Knee Osteoarthritis Risk Following Anterior Cruciate Ligament Injury	University of North Carolina at Chapel Hill, Chapel Hill, NC	Project Description: *Science and Technology*/Post-traumatic knee osteoarthritis (PTOA) is a leading cause of medical separation from military service, degrades quality of life, increases the risks of several comorbidities (e.g., obesity, depression, cardiovascular disease), and is a primary contributor to years of life lost due to disability. Improving rehabilitation of knee injuries is paramount for maintaining the combat readiness of our armed forces and preserving the health and well-being of Service members, veterans, and the American public. In collaboration with Womack Army Medical Center (WAMC), this ongoing study aims to evaluate the effects of a local muscle vibration (LMV) device used for anterior cruciate ligament reconstruction rehabilitation in comparison to standard rehabilitation by assessing quadriceps function, gait biomechanics linked to PTOA development, patient self-report outcomes, and MRI indicators of knee joint health via a Phase 2 treatment, single-blind, randomized controlled clinical trial. These studies are necessary to establish the efficacy of the LMV prototype and accelerate its development as a commercially available device. DoD Benefit: In addition to being cost-effective, the portable nature of the prototype LMV device could have substantial implications for military personnel and U.S. citizens, particularly those with limited access to rehabilitation facilities.	$11,000[*] (Sent to WAMC in support of this effort).

NO.	PROJECT TITLE	RECIPIENT	PROJECT DESCRIPTION AND DoD BENEFIT	JWMRP FUNDING AMOUNT
4.	Investigational New Drug (IND)-Enabling Studies of Novel A. baumannii Therapeutics in Combat-Relevant Animal Models	Walter Reed Army Institute of Research, Silver Spring, MD	Project Description: *Science and Technology/Acinetobacter baumannii* is an opportunistic pathogen that targets immunocompromised individuals and is responsible for thousands of deaths and enormous financial burden in civilian and military healthcare systems. This pathogen was always among the most frequently isolated species from combat wounds in recent conflicts. *A. baumannii's* intrinsic resistance to antibiotics combined with genomic flexibility to increase its fitness makes it extremely difficult to treat. Walter Reed Army Institute of Research has identified Outer Membrane Protein OmpW as a druggable conserved key transport protein among clinical isolates of *A. baumannii* and other Gram-negative bacteria and developed small molecule candidates against OmpW that have demonstrated efficacy in vitro and in a murine wound infection model. This project will involve in vivo safety and efficacy studies of lead therapeutic candidates in combat relevant animal models involving blast and polytrauma. Clearly identifiable "go-no-go" checkpoints will identify the top lead compound and support pre- IND meetings with the U.S. Food and Drug Administration (FDA). DoD Benefit: The development and availability of novel antibacterials for the treatment of *A. baumannii* will maximize Warfighter health and combat effectiveness.	$572,828

NO.	PROJECT TITLE	RECIPIENT	PROJECT DESCRIPTION AND DoD BENEFIT	JWMRP FUNDING AMOUNT
5.	Preclinical Development of a Balanced, Tetravalent, Live-Attenuated Vaccine Against the 4 Dengue Virus Serotypes	Codagenix, Inc., Farmingdale, NY	Project Description: *Science and Technology*/The mosquito-borne dengue virus (DENV) is a major international health concern and was ranked as the top viral threat to U.S. military personnel and the third most significant infectious disease threat overall by a military prioritization panel in 2019. In collaboration with the Naval Medical Research Center (NMRC), this project is a critical step in the development of CodaVax-DENV, a tetravalent live attenuated vaccine to prevent dengue fever for which the only current prevention strategy is the avoidance of mosquito bites. Aims primarily focus on administering CodaVax-DENV to non-human primates and monitoring animals for reduced viremia in response to DENV challenge and development of a neutralizing antibody response that persists for at least 24 weeks. This remaining pre-clinical work, along with required manufacturing tasks, will allow for the preparation and submission of an IND package to the FDA to enable first-in-human clinical trials. DoD Benefit: Successful development of CodaVax-DENV would address a critical unmet need in protecting active duty and retired Service members and the public against DENV. It would also be a tremendous benefit to the billions of people living in DENV endemic regions.	$37,000* (Sent to the NMRC in support of this effort).

NO.	PROJECT TITLE	RECIPIENT	PROJECT DESCRIPTION AND DoD BENEFIT	JWMRP FUNDING AMOUNT
6.	Clinical Validation of a Portable, Ruggedized Antimicrobial Wound Dressing in Management of Large Surface Area Burns for Prolonged Field Care and Long-Term Care	KeriCure, Inc., Wesley Chapel, FL	Project Description: *Science and Technology*/The ability to provide advanced wound care for large area burns in theater is a critical capability gap. KeriCure's Field Shield Wound Dressing (FSWD) is positioned to fill this gap with extensive preclinical data supporting antimicrobial efficacy against multidrug-resistant bacteria and fungi. The lightweight, ruggedized pump spray barrier is intended to manage combat wounds, including large surface area burn wounds, in Roles of Care 1–4, austere and prolonged field care, and hospital and fixed care environments. In collaboration with the U.S. Army Institute of Surgical Research (USAISR), the current project involves: (1) completion of manufacturing and stability testing of FSWD to support a clinical trial; (2) a randomized clinical trial to establish the ease of use of FSWD in the management of multiple large burn wounds, as well as the ability of the dressing to promote wound healing/closure, mitigate infection development, and reduce pain associated with dressing changes, compared to the standard of care silver wound dressing; and (3) development of product clinical guidelines and training requirements. DoD Benefit: Though the proposed clinical studies are applicable for acute wounds that impact military and civilian populations, the clinical trial of this wound dressing will specifically address large surface area burn wounds often associated with combat injuries. The USAISR, the only DoD burn center in the United States, will serve as one of the two study sites for this trial. FSWD has the capability to	$3,111,212

NO.	PROJECT TITLE	RECIPIENT	PROJECT DESCRIPTION AND DoD BENEFIT	JWMRP FUNDING AMOUNT
			advance Warfighter operational performance and medical readiness.	
7.	Late-Stage Preclinical Development of Teixobactin to Treat Drug-Resistant Infections	NovoBiotic Pharmaceuti-cals, LLC, Cambridge, MA	Project Description: *Science and Technology*/In the United States, bacterial infections cause over 300,000 hospitalizations and 35,000 deaths annually due to infections caused by drug-resistant pathogens. The burden of skin and soft tissue infections among military populations remains high, with an overall rate of 353 per 10,000 person-years for the period January 2016–September 2020. Preclinical studies demonstrate that NovoBiotic's novel antibiotic, Teixobactin (TXB), has a unique mode of action that prevents pathogen resistance to the drug, with activity against drug-resistant bacterial strains. The objective of this project is to complete late preclinical development tasks and establish a safe dosing regimen in a murine model for submission of an IND application to the FDA to enable a first-in-human (Phase 1) clinical trial. The current effort will also involve manufacture of the drug product to support clinical trials. DoD Benefit: Drug-resistant infections continue to pose a threat to the military due to unique environmental and occupational exposures such as combat-associated deployments. Since TXB offers key advantages over all other antibiotics, this drug has the capability to maintain training cycles and operational readiness, as well as protect force health.	$4,499,475

NO.	PROJECT TITLE	RECIPIENT	PROJECT DESCRIPTION AND DoD BENEFIT	JWMRP FUNDING AMOUNT
8.	Evaluating the Safety and Ease of Use of CounterFlow Hemostatic Gauze for Extreme Cold Environments	Versiti Blood Center and Blood Research Institute of Wisconsin, Milwaukee, WI	Project Description: *Science and Technology*/Hemorrhage is a leading cause of preventable death in civilian and military trauma settings. Challenges of providing tactical combat casualty care for hemorrhage control are exacerbated in extreme cold environments due to bulky insulated clothing hindering the ability to provide compression and vasoconstriction limiting intravenous (IV) access. Versiti's new hemostatic dressing, CounterFlow-Gauze, effectively delivers thrombin to promote immediate hemostasis and tranexamic acid (TXA) to prevent re-bleeding, which assists with stabilization during acute, prolonged, and en route care without the need for compression or IV TXA. This project involves studies in preclinical animal models to assess the toxicology, pharmacology, and biocompatibility of CounterFlow-Gauze components, and collection of data on the efficacy and feasibility of use in extreme cold environments. The overarching objective is to achieve FDA clearance for CounterFlow-Gauze and ensure production of a safe, high quality, and effective product for future clinical trials. DoD Benefit: CounterFlow-Gauze addresses the DoD medical requirement for technologies to stop blood loss, resuscitate casualties, and limit the immediate, short- and long-term consequences of severe hemorrhage. CounterFlow-Gauze is expected to directly decrease Service member deaths and disabilities resulting from hemorrhage and trauma in austere and extreme cold weather operations.	$4,500,000

NO.	PROJECT TITLE	RECIPIENT	PROJECT DESCRIPTION AND DoD BENEFIT	JWMRP FUNDING AMOUNT
9.	Evidence-Based Injury Criteria for Blast Exposure in Humans	Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc., Bethesda, MD	Project Description: *Science and Technology*/Traumatic brain injury (TBI) is a major cause of morbidity among Service members deployed to warzones, with 82 percent of cases characterized as mild (mTBI). Blast exposure from explosive devices is known to cause mTBI, yet the biomechanics in the human head that are responsible for injury are unknown, and there are no blast-injury criteria that delineate the pressure exposures that result in a brain injury. This project, performed by the Biotechnology High Performance Computing Software Applications Institute (BHSAI) of the Telemedicine and Advanced Technology Research Center under contract with the Henry M. Jackson Foundation for the Advancement of Military Medicine, will reconstruct an actual missile attack on a U.S. base, reproducing the blast-pressure exposure experienced by Warfighters, and link it to documented mTBI diagnoses. Using BHSAI's validated biomechanical model of the human head, in collaboration with the U.S. Army Engineer Research and Development Center (USAERDC), the study will accurately characterize the pressure wave loading on the human head due to blast exposure inside a bunker and computationally quantify the biomechanical brain responses to blast exposure. These results will be mapped to de-identified medical records, provided by the USAMRDC Joint Trauma Analysis and Prevention of Injury in Combat program, to establish evidence-based injury criteria for mTBI and link blast-pressure exposure and the likelihood of brain injury. DoD Benefit: Injury criteria established in this project will inform and accelerate the	$1,912,050 + $2,346,419 (Sent to the USAERDC in support of this effort).

NO.	PROJECT TITLE	RECIPIENT	PROJECT DESCRIPTION AND DoD BENEFIT	JWMRP FUNDING AMOUNT
			development of quantitative screening tools for blast-pressure exposure. In conjunction with wearable sensors, these tools will identify Warfighters at risk for mTBI at the point of exposure. Results will also inform the design of related personal protective equipment.	
10.	Remote Frostbite Detector	Vivonics, Inc., Bedford, MA	Project Description: *Science and Technology*/Cold weather injuries are of significant military concern due to their adverse impact on operations and high financial costs of treatment and disability. Frostbite is a localized freezing cold injury. Several diagnostics have been developed to define the severity and extent of frostbite tissue injury; however, none of these technologies can detect frostbite onset before it inflicts significant injury. Vivonics has developed a Remote Frostbite Detector (RFD) that uses an optical-based system to non-invasively and precisely measure hemodynamics, vasoconstriction, and vasodilation to detect frostbite early and remotely. This project aims to gather inputs and requirements; refine the diagnostic prototype; develop a phantom to mimic human hemodynamics and refine associated algorithms; collect pilot data from 30 human subjects in a well-controlled environment; and prepare a pre-Investigational Device Exemption (IDE) submission to the FDA. DoD Benefit: The RFD will provide objective measurements of frostbite development and progression and allow users to detect early signs of occurrence, therefore preventing tissue damage, reducing the negative impact on Warfighter operational performance and readiness, and improving medical outcomes for Service members operating in cold environments.	$3,476,377

NO.	PROJECT TITLE	RECIPIENT	PROJECT DESCRIPTION AND DoD BENEFIT	JWMRP FUNDING AMOUNT
11.	BATDOK™ for Use Military Operational Medicine for Telemedicine, Telemonitoring and Telementoring (TM3)	711th Human Performance Wing, Wright-Patterson Air Force Base, OH	Project Description: *Advanced Development*/Special Warfare Airmen conduct unique ground operations that assist, control, enable, and execute air and space power. The 711th's Battlefield Air-Targeting Man Aided Knowledge program is dedicated to the research, development, demonstration, assessment, and maturation of new and emerging technologies to enhance the battlefield-effectiveness of the Air Force Special Warfare community. One such technology is Battlefield Assisted Trauma Distributed Observation Kit (BATDOK™), a software application that establishes an array of communication channels affording bi-directional teleconsulting with remote providers, team member situational awareness reporting, digital exchanges of metadata with medical monitors, and transport platform integration. In collaboration with Ball Aerospace, this project involves additional prototyping, testing, evaluation, and integration of wearable computational devices used in the care and transport of injured Warfighters, including software development and refinement for the telemedicine/telesupport capability of BATDOK™. DoD Benefit: BATDOK™ provides the operational medicine community with telemedicine protocols and virtual medicine on par with civilian systems, while meeting military-specific needs for cybersecurity, communications, and documentation; reduces the medical manpower required to provide battlefield care; and improves patient outcomes through reduced errors and availability of greater care.	$5,000,000 (Sent to the Air Force Research Laboratory to add to an existing contract for this effort).

NO.	PROJECT TITLE	RECIPIENT	PROJECT DESCRIPTION AND DoD BENEFIT	JWMRP FUNDING AMOUNT
12.	Freeze-Dried Plasma System	Terumo BCT Biotechnologies, LLC, Lakewood, CO	Project Description: *Advanced Development*/Hemorrhage is the most common preventable cause of death in both civilian and military trauma (up to 40 percent of all cases). Studies have shown that early plasma administration improves clinical outcomes after trauma; however, the storage requirements and thawing time of conventional frozen or thawed plasma can be challenging, especially in emergency situations. In contrast, freeze-dried plasma can be stored at room temperature and can be reconstituted for transfusion in minutes, making plasma available when and where it is needed. Terumo is developing a Freeze-Dried Plasma System (FDPS) to produce their freeze-dried plasma product from plasma frozen within 24 hours of phlebotomy or fresh-frozen plasma units from up to 10 donors. This project aims to achieve first human use readiness, obtain approval of an IDE submission, and maintain a critical path toward initial operational capability. DoD Benefit: The FDPS provides decentralized manufacturing of pooled dried plasma for use when conventional plasma is unavailable or impractical. This effort will result in an FDA-approved blood product to restore lost blood volume and mitigate hemorrhage consequences to reduce battlefield mortality by up to 25 percent overall, extend the golden hour, and save Warfighter lives.	$3,200,000 (Sent to the NMRC, Naval Advanced Medical Development to add to an existing contract for this effort).

NO.	PROJECT TITLE	RECIPIENT	PROJECT DESCRIPTION AND DoD BENEFIT	JWMRP FUNDING AMOUNT
13.	Clinical Decision Support System (CDSS) for Medical Applications	U.S. Army Combat Capabilities Development Command (DEVCOM)—Aviation and Missile Center, Redstone Arsenal, AL	Project Description: *Advanced Development*/Multi-Domain Operations (MDO) may preclude availability of experienced medical care providers at the point of injury, prevent communications to skilled providers, limit near-term evacuation, and require medics to operate in austere environments for extended periods with limited resources and capabilities. CDSS provides actionable treatment recommendations for non-expert providers in resource constrained environments and prolonged field care (PFC) scenarios. This decision-supported capability will assist medics with patient assessment, triage, treatment, and disposition in MDO to improve the care of wounded Warfighters through enhanced situational awareness for medics. For this project, in collaboration with the U.S. Army Medical Evacuation Concepts and Capabilities Division at Fort Rucker, AL, DEVCOM is focused on CDSS software and algorithm development based on current standards of care as defined by Joint Trauma System Clinical Practice Guidelines, and on CDSS integration and testing with the existing Transport Telemedicine System (TTS). DoD Benefit: Integrating CDSS into TTS will address top medical gaps related to PFC and medical documentation and provide telemonitoring capabilities based on available bandwidth between medics and existing clinicians. CDSS will support medical evacuation during exploit, alerts, and rallies, while preparing deployed hospitals during recompete.	$2,800,000 (Sent to the U.S. Army Medical Materiel Development Activity to add to an existing contract for this effort).

NO.	PROJECT TITLE	RECIPIENT	PROJECT DESCRIPTION AND DoD BENEFIT	JWMRP FUNDING AMOUNT
14.	Arctic Medical Capability Testing	DEVCOM—Soldier Center, Natick, MA	Project Description: *Advanced Development*/In response to the Army's initiative on "Regaining Arctic Dominance," published January 2021, the Army must provide medical care in arctic conditions with temperatures as low as -65°F. An Arctic Gap Quick-Look Report published by the Center for Army Lessons Learned identified five medical gaps to address to effectively provide Role 3 medical care in the arctic environment. One gap was that current hospital center equipment only works to -25°F. For this project, in collaboration with the U.S. Army Test and Evaluation Command at Aberdeen Proving Ground, MD, DEVCOM is testing current commercial-off-the-shelf hospital equipment that deploys quickly and provides the necessary power and heating capabilities for an extreme cold environment. This testing will be carried out in a controlled climate chamber and will include assessments of the deployed surgical Shelter of the Future and High Wind Kit for expeditionary medicine. DoD Benefit: This project addresses Defense Health Agency and Army guidance to explore ways to enhance Service member performance in military environmental/climatic extremes, operational performance, and medical readiness.	$350,000 (Sent to the U.S. Army Medical Materiel Development Activity to add to an existing contract for this effort).

NO.	PROJECT TITLE	RECIPIENT	PROJECT DESCRIPTION AND DoD BENEFIT	JWMRP FUNDING AMOUNT
15.	Air Evac Digital Intern	711th Human Performance Wing, Wright-Patterson Air Force Base, OH	Project Description: *Advanced Development*/Clinical decision support (CDS) tools can assist medical personnel to integrate evidence-based best practices, operational context, resource constraints, and patient clinical status. CDS can broaden the scope of tasks performed by providers, empowering them to make risk-informed decisions. This project involves integrating the Digital Intern® CDS tool, developed by Integrated Vital Medical Dynamics, with Air Force-deployed medical monitoring systems through implementation of algorithm integration pathways for both iOS and Android devices. En route care medical vignettes/scenarios will be developed and tested to broaden the potential use case portfolio for Digital Intern®, and the Digital Intern® will be modified and adapted to work within existing Air Force medical monitoring systems, with a focus on limited resources available for treatment (e.g., medicine, supplies, equipment). DoD Benefit: The Digital Intern® CDS tool will decrease the cognitive load caused by oversaturation of complex tasks; provide evidence-based suggestions for optimizing allocation of limited resources; and lead to improved patient outcomes, safety, and return-to-duty.	$1,700,000 (Sent to the Air Force Research Laboratory to add to an existing contract for this effort).

NO.	PROJECT TITLE	RECIPIENT	PROJECT DESCRIPTION AND DoD BENEFIT	JWMRP FUNDING AMOUNT
16.	Air Force Ground Surgical Team (GST) Tactical Anesthetic Workstation	711th Human Performance Wing, Wright-Patterson Air Force Base, OH	Project Description: *Advanced Development*/To enable intubation and surgery close to the battlefield, GSTs must set up fully functional emergency rooms and operating rooms (ERs/ORs) in a matter of minutes. Unfortunately, some patient movement items (PMI), including aspirators, ventilators, and monitors, are kept on the ground, limiting their accessibility to care providers, and creating a trip hazard. The Tactical Anesthetic Workstation (TAW) provides a solution to this problem. This project involves further prototype refinement to improve effectiveness, manufacturability, transportation, and employment of the TAW. Considerations include collapsibility, ease of assembly, adjustability/rotatability, footprint, weight, and height. Project deliverables include three prototypes for evaluation and user feedback with demonstrated manufacturing readiness, and a data package containing computer-aided drawings, test data, setup, assembly and install instructions, limitations, and use case parameters. DoD Benefit: This modular workstation consolidates PMI into a central location, provides a single point for ER/OR monitoring and intervention for expeditionary medicine in austere environments, and improves GST performance, thus saving lives and improving patient outcomes. The 711th will partner with an industry partner to initiate low-rate initial production of the TAW. Fielding is expected in FY 2025.	$1,450,000 (Sent to the Air Force Research Laboratory to add to an existing contract for this effort).

* These projects, initially awarded JWMRP funding prior to FY 2022, have intramural prime recipients or sub-awardees that were approved to receive current-year funds to support costs that those institutions are unable to obligate at the start of the period of performance due to the two-year obligation period for RDT&E funds.

SUMMARY

Congressional appropriations for the FY 2022 JWMRP totaled $40M. The JWMRP invested approximately $37M in research, after CDMRP management costs, USAMRDC withholds, and SBIR/STTR withholds. The FY 2022 JWMRP funded 16 projects. These projects, each aligned under the Science and Technology or Advanced Development project domains, collectively address medical research areas aligned with DHP core programs. This diverse set of JWMRP projects enhances and accelerates high-priority DoD and Service medical requirements and has the potential to provide significant benefits to military medicine.