



FISCAL YEAR 2010 APPROPRIATIONS REQUEST

DEPARTMENT OF DEFENSE

Item: Pennsylvania National Guard Implementation of the Joint CONUS Communications Support Environment (JCCSE)
Request: \$4,000,000
Account: Operations and Maintenance, Army National Guard
Budget Activity Number: 1
Sub-Activity Group Number: 131 (Base Operations Support)
Language: NA
Intended Recipient: Pennsylvania National Guard
Address: Ft. Indiantown Gap, PA
Purpose/Project Description: The JCCSE communications architecture provides an interface for communications between federal and state agencies concerning incidents involving homeland defense and disaster mitigation. The ongoing efforts of this program will allow for the integration of JCCSE communications capabilities with the DOD, state, and local networks. Requested funds will be used to tie the Pennsylvania National Guard with the National Guard Bureau's JCCSE program.

Item: Proton Beam Therapy Project
Request: \$2,500,000
Account: Research and Development, Army
Line: 30
PE: 0603002A
Intended Recipient: University of Pennsylvania School of Medicine
Address: Philadelphia, PA
Purpose/Project Description: Requested funds will support a joint collaborative effort between the University of Pennsylvania Health System (UPHS) and the Walter Reed Army Medical Center (WRAMC) to build a state-of-the-art proton radiotherapy facility that integrates radiotherapy as well as medical oncology and translational research. This East Coast location of the new proton therapy facility will be a more convenient, unique portal of entry, through WRAMC, for all military health care beneficiaries.

Item: Micro Inertial Navigation Unit Technology
Request: \$2,000,000
Account: Research and Development, Army
Line: 32
PE: 0603004A
Intended Recipient: Virtus Advanced Sensors

Address: Pittsburgh, PA

Purpose/Project Description: Requested funds would support the development of a single chip 5, 6-axis Micro Electro-Mechanical Systems (MEMS) Inertial Navigation Unit (INU), which would significantly advance the performance and possible applications of inertial sensor technology at a reduced cost and weight. This new system would integrate global positioning system (GPS) technology and the inertial navigation functions, enabling navigation and tracking effectively and accurately in all environments, including regions where GPS is unavailable due to terrain masking, enemy jamming or other environmental factors.

Item: Multi-Scale Modeling of 3-D Damage Tolerant Composite Materials

Request: \$2,000,000

Account: Research and Development, Army

Line: 5

PE: 0602105A

Language: NA

Intended Recipient: Widener University

Address: Chester, PA

Purpose/Project Description: Requested funds will be used to develop and validate multi-scale modeling for lightweight 3-dimensional composite materials that will provide the high level of damage tolerance required for U.S. Army platforms. Composite materials offer significant weight reduction (30-50 percent) over traditional materials, such as aluminum and steel. Lightweight materials are essential for air and ground vehicles.

Item: Carbide Derived Carbon for Treatment of Combat Related Sepsis

Request: \$3,000,000

Account: Research and Development, Army

Line: 28 (Medical Technology)

PE: 0602787A

Language: NA

Intended Recipient: Y-Carbon Inc.

Address: King of Prussia, PA

Purpose/Project Description: Funding will be used to develop an advanced treatment of sepsis, which would reduce battlefield complications from blood loss and improve survivability. Carbide derived carbon has a proven use as a more effective alternative to activated carbon in treating poisonings, as well as a Biocidal/Bactericidal applications.

Item: Hot Isostatic Processing (HIP)

Request: \$5,000,000

Account: Defense Production Act

Line: NA

PE: NA

Language: NA

Intended Recipient: Crucible Compaction Metals

Address: Oakdale, PA

Purpose/Project Description: Funding will be used to develop a very large diameter hot isostatic press (HIP) to maintain the US global leadership in the global market while providing

the capability to manufacture large critical components for the military and industrial base. HIP produces near-net shape components, usually with properties equivalent to forgings, thereby reducing costly machining and recycling of expensive materials. It can produce a broad range of part sizes and often extends the life cycle of these components. There are at least four areas of component design and manufacturing limited by current HIP capability: critical marine hardware; large castings for advanced military aviation turbine engines; forging performs for ultra-high efficiency land-based gas turbines; and, critical components for US steel making and oil production.

Item: Development of hsp70 Inhibitors as Therapeutics Against Category A Biothreat Agents and other Bacterial Pathogens

Request: \$2,000,000

Account: Research and Development, Army

Line: 15

PE: 0602622A

Language: NA

Contractor: Chaperone Technologies, Inc.

Address: East Stroudsburg, PA

Purpose/ Project Description: The funds will be used to continue the development of Chaperone's antimicrobial drugs and get them into the hands of the US fighting soldier and military medical teams as quickly as possible to use in the event of exposure to weaponized Category A biowarfare pathogens or life threatening battlefield infections. Chaperone is currently engaged in a contracted program with the US Army Edgewood Chemical/Biological Command to develop novel antimicrobial drugs to treat Category A biowarfare pathogens and battlefield acinetobacter wound infections. Requested funds would be used to continue the development of the drugs and to plan preclinical development in collaboration with the US Army.

Item: Smart Oil Sensor

Request: \$4,000,000

Account: Research and Development, Army

Line: 13

PE: 0602601A

Intended Recipient: Impact Technologies

Address: State College, PA

Purpose/Project Description: Requested funds will be used to develop a sensor to provide a detailed, real-time evaluation of engine oil health state as well as the identification and quantification of many of the primary internal combustion engine lubricant failure modes, eliminating the need to change oil based on inherently conservative mileage estimates and allowing for the safe extension of oil drain intervals. In this regard, the technology will realize significant environmental and economic benefits through the reduction of oil consumption and disposal. Additionally, this sensor will improve maintenance scheduling, enable lean logistics support and ultimately increase maintenance efficiency across the fleet.

Item: Hybrid Capacitor Supercell

Request: \$3,000,000

Account: Research and Development, Navy

Line: 53

PE: 0603635M

Language: NA

Intended Recipient: Axion Power International, Inc

Address: New Castle, PA

Purpose/Project Description: Funding will be used to demonstrate the successful development of a new power source that merges the best qualities of a battery with those of a supercapacitor. The hybrid capacitor supercell will allow the military to replace the heavy, lead acid battery in their vehicles with a new, more reliable and less temperature dependant energy source that is 25-40 percent lighter. A significant cost savings will also be achieved as a result of this technology effort, and will provide a more environmentally friendly technology which uses 60 percent less lead than typical lead acid batteries.

Item: USSOCOM Network-Centric Security

Request: \$3,200,000

Account: Research and Development, Defense Wide

Line: 65

PE: 1160402BB

Language: NA

Intended Recipient: Unisys Corporation

Address: Malvern, PA

Purpose/Project Description: The initiative will continue support of a USSOCOM pilot program to assess the data security technology which simultaneously provides network security, coalition info-sharing and storage of data-at-rest. This technology splits data into separate “shares” for transfer and storage to ensure data is not compromised.

Item: COTS Technology for Space Command and Control

Request: \$4,000,000

Account: Research and Development, Air Force

Line: 145

PE: 0207410F

Language: NA

Intended Recipient: Analytical Graphics

Address: Exton, PA

Purpose/Project Description: The Air Force’s Electronics Systems Center (ESC) is charged with integrating commercial technologies into the space superiority effort. The ESC develops, tests, and delivers space command and control services that integrate existing space situational awareness data. The requested funds will be used to refine further existing commercial-off-the-shelf (COTS) technologies to make them completely applicable for space command and control programs.

Item: High Homogeneity Optical Glass

Request: \$5,000,000

Account: Defense Production Act

Line: NA

PE: NA
Language: NA
Intended Recipient: SCHOTT North America
Address: Duryea, PA

Purpose/Project Description: A domestic production source for high homogeneity optical glass is vital to the development and manufacturing of optical components, laser hosts, and optical systems used in military applications. Many night vision optics for individual soldier (helmet displays) and weapon systems (gunship night scopes) require high quality, high homogeneity optical glasses. Transmissive surveillance optics components also require high purity, low bubble content, high homogeneity optical materials. The demand for high homogeneity optical glass has increased because of the prevalence of electronics and lasers within optical systems and the common acceptance of opto-electronics and micro-opto-electro-mechanical systems. The ability to produce and supply these materials involves a very sophisticated production process that incorporates raw materials of the highest purity, complex melting and forming system designs, extraordinary processing controls, and state-of-the-art inspection and selection techniques. These capabilities are necessary to the success of multiple government programs, as well as commercially available products for industrial, medical and commercial applications. Any loss of the technological capabilities, process controls, and engineering/manufacturing workforce required to produce high homogeneity optical/technical glasses and glass ceramics would eliminate the only existing domestic source of these capabilities for large military systems.

Item: Ballistic Armor Research
Request: \$4,000,000
Account: Research and Development, Army
Line: 5
PE: 0602105A
Language: NA
Intended Recipient: Air Products and Chemicals
Address: Allentown, PA

Purpose/Project Description: Funding is requested to better understand the defeat mechanisms of the components of the armor design by focusing on polymers. While current approaches in vehicle armor technology continue to use all-metal construction or in some cases ceramic-steel and polymer-ceramic-steel designs, there is a new generation of armor based on multilayer composite technology, comprising ceramics, metals, and polymers. Funds would enable research on an optimization of new designs to meet evolving threats. Programs such as the Joint Light Tactical Vehicle would directly benefit from the center of excellence through its ability to rapidly screen materials and determine their protection value. Research conducted at the center will also provide a fundamental understanding of how such materials undergo physical and chemical changes during the blast/impact. Fiscal year 2010 funding is needed to take advantage of the advances made in the first phase, when the project team developed models for screening polymer composites and fabricated samples for ballistics field testing.

Item: Temperature Resistant Landing Pad Jet Blast Protection
Request: \$3,000,000
Account: Research and Development, Air Force

Line: 7
PE: 0602102F
Language: NA
Intended Recipient: PPG Industries
Address: Pittsburgh, PA

Purpose/Project Description: Funds would be used to develop a non-skid coating to withstand the high temperatures generated by the exhaust gases of modern vertical take-off and landing (VTOL) aircraft, such as the F-35 and V-22. Technologies to address these needs should be available for application to aircraft carrier decks as well as conventional landing strips at Air Force bases. Through a program of modeling, design, testing, and validation these next generation materials will enable the durability improvements required of VTOL aircraft.

Item: High Speed Power Node Switching and Control Center
Request: \$4,000,000
Account: Research and Development, Navy
Line: 16
PE: 0603123N
Language: NA
Intended Recipient: SPD Electrical Systems
Address: Philadelphia, PA

Purpose/Project Description: The Power Node Switching and Control Center will provide the electrical transmission and distribution system for Navy ships that will assure continuously available quality power to the vital combat system loads and further provide a reduction in fuel cost and manpower, and reduce the size, weight, and cost of the electrical system. The Power Node Switching Control has been proven at low voltages, where it has demonstrated that it can interrupt an electrical fault in less than 500 microseconds which is 100 times faster than the circuit breakers used today. This provides much greater electrical system survivability and reliability, and is critical to the survivability of the ship and its crew in preventing fires. Requested funds will be used to validate the technology at medium voltage levels in order to address the future needs of the U.S. fleet.

Item: Low Cost- Laser Module Assembly for Acoustic Sensors
Request: \$2,700,000
Account: Research and Development, Navy
Line: 41
PE: 0603561N
Language: NA
Intended Recipient: Clear Align
Address: Eagleville, PA

Purpose/Project Description: Funding would be used to develop and initiate manufacturing of a tunable laser needed to expand the Navy's sonar detection capabilities. Fiber Optic Acoustic Systems (FOAS) are demonstrating the inherent lower cost and higher reliability promised by their introduction on the Light Weight Wide Aperture Array (LWWAA) on the Virginia class submarine.

Item: Ammunition Production Base Support

Request: \$4,600,000
Account: Procurement of Ammunition, Army
Line: 36
PE: NA
Language: NA
Intended Recipient: General Dynamics Ordnance and Tactical Systems Scranton Operations
Address: Scranton, PA
Purpose/Project Description: Upgrades to General Dynamics' Scranton Facility are necessary to maintain production requirements for war reserve and training ammunition that has resulted from current overseas operations. The Army has significant ammunition industrial production base requirements and the level of funding has not met these requirements. Additional funding is requested for fiscal year 2010 to assist in addressing the modernization of this vital facility. Scranton Army Ammunition Plant is the only large volume large caliber projectile metal parts-producing facility in the U.S. and is a single source for a number of critical ammunition products.

Item: Next Generation Military Seat
Request: \$4,000,000
Account: Research and Development, Army
Line: 5
PE: 0602105A
Language: NA
Intended Recipient: Global Seating Systems LLC
Address: Exton, PA
Purpose/Project Description: Funds will develop a next-generation modular seat to address the safety of all soldiers in wheeled vehicles. While much attention and money are being spent on new protected vehicle design, attention has only recently focused on seating and its role in protecting our soldiers. Legacy seating systems on many current vehicles have been tested and shown to amplify IED/ mine inputs and fail to meet the minimum Federal Motor Vehicle Safety Standards and Regulations required for passenger vehicles. Global Seating Systems has developed a family of protective seats that have been tested and approved by the Army and Marines. These seats are currently in production and being used on several of the Mine Resistant Ambush Protected vehicle platforms. The result of this engineering effort will be a reduction in soldier injuries and death that often result from the shock forces generated into the cab of the vehicle during both the blast and the slam down phases that follow the ignition of an IED or from a crash / rollover.

Item: Advanced Head Protection Material Development and Manufacturing
Request: \$3,000,000
Account: Research and Development, Army
Line: 29
PE: 0603001A
Language: NA
Intended Recipient: Mine Safety Appliances
Address: Pittsburgh, PA

Purpose/Project Description: Requested funds will be used to develop advanced impact head and neck protective materials to be integrated into current and future personnel protection helmets to protect servicemembers from blast injuries.

Item: CH-47 Active Vibration Control System

Request: \$3,000,000

Account: Research and Development, Army

Line: 8

PE: 0602211A

Language: NA

Intended Recipient: LORD Corporation

Address: Erie, PA

Purpose/Project Description: Funding will be used to complete the operational test and evaluation of the OMNI Active Vibration Control System (AVCS) on Boeing CH-47 Chinook cargo helicopters. OMNI-AVCS will reduce vibration continuously in-flight, while significantly reducing weight, and increasing helicopter payload and range. The system also reduces operational costs due to decreased metal fatigue.

Item: Influenza Vaccine Development

Request: \$4,000,000

Account: Research and Development, Army

Line: 28

PE: 0602787A

Language: NA

Intended Recipient: Vital Probes

Address: Mayfield, PA

Purpose/Project Description: Requested funding will be used to develop a novel proteomic surveillance system for identifying newly emerged strains of influenza and development of influenza vaccines for present and newly emerged strains. The most effective means of preventing an influenza pandemic is immunization with a vaccine that protects against recent circulating strains. A proteomic surveillance system will be utilized to identify and determine the genetic composition of newly emerged influenza strains that evade protection from pre-pandemic vaccines. This surveillance system will result in rapid development and testing of GeMI-Vax vaccines against new influenza strains. GeMI-Vax vaccines can be developed, tested, and produced in a short period of time once a potentially pandemic influenza strain is identified. This technology is less expensive to produce and store than presently used vaccine technologies.

Item: Ferroelectric Component Technology

Request: \$3,550,000

Account: Research and Development, Defense Wide

Line: 147

PE: 0605790D8Z

Intended Recipient: TRS Technologies, Inc.

Address: State College, PA

Purpose/Project Description: Requested funds will be used to improve performance of electrical components of advanced non-lethal munitions designed to disrupt electronics used to control improvised explosive devices (IEDs). These funds will be used for process scale-up to component production levels needed for IED defeat munitions being developed and fielded by the Army. The components serve as the power sources for these non-lethal munitions.

Item: 3D Bias Woven Preform Development

Request: \$3,000,000

Account: Research and Development, Air Force

Line: 21

PE: 0603211F

Intended Recipient: Bally Ribbon Mills

Address: Bally, PA

Purpose/Project Description: Funds would be used to develop 3-dimensional (3D) woven preforms to replace conventional 2-dimensional (2D) joints. The primary limiting factor in applying composites in airframe structure is the poor damage tolerance and ballistic survivability of conventional 2D joints. To address these issues, items such as fasteners are typically added to the structure, dramatically effecting cost, weight and manufacturability of the structure. The application of 3D woven preforms transfers the out-of-plane load into the 3D preforms thereby enabling high strength, damage tolerant structures. The technology developed in this project will enhance the performance, while lowering the cost and weight, of structures aboard aircraft.

Item: Millennia Military Vehicles/Expandable Boom Fork Lift (MMV/EBFL)

Request: \$3,000,000

Account: Procurement, Marine Corps

Line: 50

PE: NA

Language: NA

Intended Recipient: JLG Industries, Inc.

Address: McConnellsburg, PA

Purpose/Project Description: Funding will be used to procure 25 additional MMV/EFBLs as identified by the Marine Corps as a critical need.

Item: Vaccine Research

Request: \$2,500,000

Account: Research and Development, Army

Line: 28

PE: 0602787A

Language: NA

Intended Recipient: University of Pittsburgh

Address: Pittsburgh, PA

Purpose/Project Description: Funds will be used by the University of Pittsburgh's Center for Vaccine Research to develop preventive or therapeutic treatments for major viral and bacterial illnesses. The long-term goal is to develop vaccines that work against all strains of an illness, as well as more effective antiviral drugs through DNA vaccine development, RNA interference, and development of vaccine adjuvants.

Item: Hybrid Power System for Large Unmanned Undersea Vehicles (UUV)

Request: \$4,000,000

Account: Research and Development, Navy

Line: 5

PE: 0602123N

Intended Recipient: Penn State University Applied Research Lab

Address: University Park, PA

Purpose/Project Description: Requested funds will be used to develop a hybrid power system consisting of reactant storage, low and high power conversion, and power transmission subsystems demonstrating aluminum/seawater combustion, which will provide significantly higher power densities for unmanned undersea vehicles (UUV). Increased endurance of UUVs will extend the Navy's forward presence, expand mission capability and keep sailors and naval platforms out of harm's way.

Item: Combat Medic Training

Request: \$2,850,000

Account: Research and Development, Army

Line: 38

PE: 0603015A

Language: NA

Intended Recipient: CHI Systems, Inc.

Address: Fort Washington, PA

Purpose/Project Description: The prototype combat medic trainer combines an instrumented mannequin, wireless handheld devices and 3-D computer simulation to teach proper tourniquet application. Funding will enable expansion of the device by adding an instrumented leg apparatus to provide leg tourniquet training in addition to the arm, and to add needle chest decompression techniques to address the second leading cause of preventable death on the battlefield, tension pneumothorax. Tourniquet application is a crucial hands-on skill because it addresses the leading cause of preventable death on the battlefield: bleeding from extremity wounds.

Item: 101st Airborne/Air Assault Injury Prevention and Performance Enhancement Research Initiative

Request: \$3,750,000

Account: Research and Development, Army

Line: 30

PE: 0603002A

Language: NA

Intended Recipient: University of Pittsburgh, School Health and Rehabilitative Sciences

Address: Pittsburgh, PA

Purpose/Project Description: The University of Pittsburgh has established a program for the 101st Airborne/Air Assault at Fort Campbell to use research-based activities to prevent and mitigate injuries, as well as to improve performance through research-based training and nutrition programs. Requested funds will be used to create a Center of Excellence for Injury Prevention and Performance Enhancement at Fort Campbell. Enhanced screening models will

be developed by examining the epidemiological evidence of musculoskeletal injuries, performance-related attrition rates, and the physical parameters identified as biomechanical, physiological, and musculoskeletal risk factors.

Item: Precision Molding Manufacturing Technology for IR Aspheric Optics

Request: \$3,400,000

Account: Research and Development, Army

Line: 32

PE: 0603004A

Language: NA

Intended Recipient: Edmund Optics

Address: Pennsburg, PA

Purpose/Project Description: Funds will improve precision molding infrared (IR) aspheric optics technology. Infrared imaging technology, including thermal and short-wave infrared (SWIR), is integrated in missile guidance, airborne reconnaissance and situation awareness for soldiers, police, and fire fighters. This technology, when integrated into night vision and weapons platforms, enables our armed forces to detect and identify threats, and then engage and defeat the enemy at a safe distance. Current production techniques for these specialized optics have limitations in terms of cost, performance and manufacturing scalability. Aspheric optics are uniquely suited to exploit the exponential progress in IR detector performance. In the visible spectrum, the transition from machining to molding methods has already occurred. It is critical to shift IR optics production from expensive machining to cost-effective precision molding.

Item: High-Shock 100 Amp Current Limiting Circuit Breaker

Request: \$600,000

Account: Research and Development, Navy

Line: 35

PE: 0603513N

Language: NA

Intended Recipient: Eaton Corp.

Address: Pittsburgh, PA

Purpose/Project Description: Funding will be used to develop a new 100 amp breaker that will complete a family of current limiting AQB-circuit breakers used in electrical distribution systems onboard Navy combatant vessels. The new breaker will save size and weight, will eliminate the need for current limiting fuses and will enhance both the survivability of the electrical system and the survivability of the ship's mission.

Item: Dual Stage Variable Energy Absorbers

Request: \$4,070,000

Account: Research and Development, Army

Line: 5

PE: 0602105A

Language: NA

Intended Recipient: ArCCA, Incorporated

Address: Penns Park, PA

Purpose/Project Description: Funds will be used to develop a dual Stage Variable Energy Absorber to deal with the multiple shock events that are prevalent during warfare. The US Army and US Marines have a requirement for blast resistant seating to protect the occupants of ground vehicles. Current seating systems used by the US military cannot fully protect the occupant during IED blasts or the subsequent slam downs (slam down is an event which occurs following a blast when the vehicle returns to the ground). The Dual Stage Variable Energy Absorber (DSVEA) is an advanced approach to dealing with the multiple shock. For DSVEA to be beneficial in the military ground vehicle environment, it must respond to variety of input blast conditions with a full range of weighted subjects and be able to handle both the blast and the slam down phases without creating a bottoming out condition. It must also integrate with seat belts attached to the seated surface, so that the movement of the seat under blast conditions will not cause the belts to go slack and create a larger hazard following the blast.

Item: Advanced Regenerative Medicine Therapies for Combat Injuries
Request: \$5,000,000
Account: Research and Development, Army
Line: 30
PE: 0603002A
Language: NA

Intended Recipient: Pittsburgh Tissue Engineering Initiative
Address: Pittsburgh, PA

Purpose/Project Description: The goal of Advanced Regenerative Medicine program is to deliver to the armed forces regenerative medicine-based technologies that will lead to functional and aesthetic recovery from injuries incurred in military service. The Advanced Regenerative Medicine Program has achieved success in the regeneration of human tissues and organs for repair or replacement and represents great potential for treating military troops with debilitating, disfiguring and disabling extremity injuries. This program is using bioengineering techniques to prompt the body to regenerate cells and tissues, using the soldier's own cells combined with biodegradable biomaterials. Technologies for engineering tissues are developing rapidly and this program's goal is to deliver advanced therapies, such as whole organs and engineered digits and limbs, as safely and efficiently as possible to severely wounded troops.

Item: Hardmetal Epidemiology Investigation
Request: \$4,000,000
Account: Research and Development, Army
Line: 5
PE: 0602105A
Language: NA

Intended Recipient: University of Pittsburgh, Department of Biostatistics
Address: Pittsburgh, PA

Purpose/Project Description: Funding will be used for an epidemiological study to determine the potential health impacts from workplace exposures to hardmetal powders. "Hardmetal" refers to metal composites, notably tungsten carbide with a cobalt binder, known for their durability and wear resistance.

Item: High Energy Density /High Rate Rechargeable Battery

Request: \$3,150,000
Account: Research and Development, Army
Line: 18
PE: 0602705A
Language: NA
Intended Recipient: LithChem Energy Co.
Address: Folcroft, PA
Purpose/Project Description: The proposed program will combine advanced lithium ion battery technology and advanced capacitor technology to permit higher energy pulsing for communications devices, improving communications range.

Item: Tungsten Heavy Alloy Penetrator and Warhead Development
Request: \$3,500,000
Account: Research and Development, Army
Line: 17
PE: 0602624A
Language: NA
Intended Recipient: Global Tungsten and Powders Corp.
Address: Towanda, PA
Purpose/Project Description: The program is focused on the development of tungsten alloys that meet or exceed the performance of depleted uranium for designated medium and large caliber armor piercing ammunition. The program is also addressing a development effort using these materials/processes for enhancing lethality of advanced warheads, grenades and shaped charges. DOD has a current and future requirement for increased lethality in these key areas. This is a continuation of the current Tungsten Heavy Alloy Penetrator and Warhead Development Program. This phase will focus on integrating the technology that has been developed to date and improving upon that technology to develop the next size of prototypes for ballistics testing.

Item: 17-Micron Clip-on Weapon Sights
Request: \$4,000,000
Account: Research and Development, Army
Line: 19
PE: 0602709A
Language: NA
Intended Recipient: Night Vision Systems
Address: Allentown, PA
Purpose/Project Description: Requested funds will be used to develop 17-micron clip-on weapon sights which will be smaller, lighter and more power efficient than current sights. This detector technology will also improve imaging quality and target detection capabilities to improve soldiers' survivability. This funding would enable the development and evaluation of future clip-on 17-micron sighting systems, which would optimize warfighter performance by improving imaging acuity and reducing the overall weight of equipment carried by a soldier.

Item: National Center for Defense Manufacturing and Machining
Request: \$3,000,000

Account: Research and Development, Army
Line: 172
PE: 0708045A
Language: NA
Intended Recipient: National Center for Defense Manufacturing and Machining
Address: Latrobe, PA

Purpose/Project Description: Funds will be used to support the continued operations of the National Center for Defense Manufacturing and Machining (NCDMM), which exists to address and support the broad manufacturing and machining needs of the DOD and its industrial base. The NCDMM oversees operation of an advanced machining laboratory, develops and implements solutions to identified DOD manufacturing issues and trains end-item producers through classroom and web-based learning. Specific development projects are cost-shared approximately 50 percent with government and industry customers, providing significant leverage for appropriated funding. In addition, the Center has created a Job Shop Consortium of 65 small companies to provide difficult-to-procure parts to DOD.

Item: Mark 75 Maintenance Facility Support and Upgrade
Request: \$2,400,000
Account: Operations and Maintenance, Navy
BA: 01
SA: 250
Language: NA

Intended Recipient: Oto Melara North America Inc.
Address: Lester, PA

Purpose/Project Description: Funding will be used to continue maintenance and repair of the remaining Mark 75 guns in the fleet and to create a competitive environment to better support an aging weapon system.

Item: MA-16 Reel Second Source Production
Request: \$4,000,000
Account: Other Procurement, Air Force
Line: 48
PE: NA
Language: NA

Intended Recipient: Martin-Baker America, Inc
Address: Johnstown, PA

Purpose/Project Description: The Air Force procures its current MA-16 inertia reels from a single source. These reels have a high fail rate and at times have hampered flight operations. The provision of a second source option for the Air Force for retrofit would potentially mitigate a safety hazard and lower costs by bringing about competitive pricing.

Item: Army Force Generation Synchronization Tool
Request: \$3,500,000
Account: Operation & Maintenance, Army
BA: 01
SA: 113

Language: NA

Intended Recipient: ProModel Corporation

Address: Allentown, PA

Purpose/Project Description: Requested funds will be used to expand utilization of the Army Force Generation (AFORGEN) Synchronization Tool, which enables the capture of AFORGEN process in software, providing decision makers the ability to rapidly create courses of action and predict the impact of their decisions on key metrics, such as dwell-time and boots-on-the-ground. The ability through automation to run readiness risk assessments will add capability to the services.

Item: Vectored Thrust Ducted Propeller Compound Helicopter

Request: \$5,000,000

Account: Research and Development, Army

Line: 31

PE: 0603003A

Language: NA

Intended Recipient: Piasecki Aircraft Corp.

Address: Essington, PA

Purpose/Project Description: This funding would continue efforts to validate the Vectored Thrust Ducted Propeller (VTDP) Compound helicopter technology's potential to increase speed, range, survivability and reduced life cycle costs and to mature the technology to make it viable for other military aircraft. The program addresses significant capability gaps identified by the Army including: the need for enhanced self-deployment; expanded air assault and combat logistics support out to 1000km; rapid MEDEVAC of victims to critical care facilities; and improved reliability and readiness levels. The objective of this program is to mature and test the VTDP technology.

Item: Northeast Counterdrug Training Center (NCTC)

Request: \$5,000,000

Account: Drug Interdiction

Line: NA

PE: NA

Language: NA

Intended Recipient: Northeast Counterdrug Training Center

Address: Annville, PA

Purpose/Project Description: This funding would provide local, state and federal law enforcement professionals and community anti-drug coalitions no-cost training. NCTC Trains over 10,000 individuals annually. NCTC also provides critical training to military units and other DOD personnel. Located at Fort Indiantown Gap, with its satellite campus at Volk Field, WI, NCTC provides local, state and federal law enforcement professionals and community anti-drug coalitions with no-cost training in an 18-state area stretching from Maine to Virginia and west to Indiana. NCTC's state-of-the-art Polygraph Center and High Risk Entry Facility also provide critical training to military units and other DOD personnel.

Item: Portable Mobile Emergency Broadband System (PMEBS)

Request: \$4,000,000

Account: Research and Development, Army

Line: 36

PE: 0603008A

Language: NA

Intended Recipient: Rajant Corporation

Address: Malvern, PA

Purpose/Project Description: Requested funds will be used to enhance capabilities of Portable Mobile Emergency Broadband Systems (PMEBS). PMEBS are mobile self-configuring wireless broadband communication systems that can rapidly reconfigure and adapt in real-time. These standards-based wireless networks are highly mobile, self-configuring, and self-healing. Continuing research and development will focus on a second generation system to meet the growing needs of the military. First generation systems have begun to receive wide acceptance for a broad range of voice, video and data uses.

Item: NIR Sight

Request: \$4,000,000

Account: Research and Development, Navy

Line: 29

PE: 0603254N

Language: NA

Intended Recipient: RL Associates Inc

Address: Chester, PA

Purpose/Project Description: Requested funds will be used to leverage newly developed camera and laser ranging capabilities to increase standoff distance for military aircraft whose mission is to detect, identify and prosecute targets during patrol missions. An integrated near infrared ranging (NIR) sight would enable safer and more accurate mission completion as assets would be positioned farther away from enemy fire and target recognition sensitivity would be increased.

Item: Air Force Network Integration

Request: \$2,000,000

Account: Other Procurement, Air Force

Line: 29

PE: 0505393F

Intended Recipient: Pennsylvania Air National Guard

Address: Fort Indiantown Gap, PA

Purpose/Project Description: The requested funding will provide for the analysis, design, engineering, network and software services to upgrade and improve the existing Pennsylvania Air National Guard information and communications network infrastructure. The resulting capability will significantly increase the readiness and agility of the Pennsylvania Air National Guard to perform its missions by ensuring network connectivity and ensuring information and communication systems are compatible, interoperable, and accessible across all commands.

Item: Next Generation Communications System

Request: \$3,800,000

Account: Research and Development, Army

Line: 19

PE: 0602709A

Language: NA

Intended Recipient: Accipiter Systems, Inc.

Address: Wexford, PA

Purpose/Project Description: This funding would develop a next generation and scalable communications system for the warfighter with a significant reduction in size, weight and power compared to traditional systems. The project involves the creation of a novel computer networking architecture and related software protocols that offer significant increases in bandwidth usage from existing fiber optics. This will be achieved by using multiple wavelengths for simultaneous transmission of data from multiple sources to multiple destinations on a single optical fiber.

Item: Blood Safety and Decontamination Technology

Request: \$3,600,000

Account: Research and Development, Army

Line: 30

PE: 0603002A

Language: NA

Intended Recipient: Cerus Corporation

Address: Philadelphia, PA

Purpose/Project Description: Funds would be used to develop a prototype red cell processing device to inactivate transfusion-transmitted infectious pathogens in blood prepared for transfusion of wounded military personnel. The device will be evaluated to demonstrate that it can be operationally used in military and civilian blood centers, especially Combat Support Hospitals in areas of forward deployment.

Item: Networked Reliability and Safety Early Evaluation System (NRSEES)

Request: \$3,250,000

Account: Research and Development, Army

Line: 33

PE: 0603005A

Language: NA

Intended Recipient: Bosch Rexroth Corporation

Address: Bethlehem, PA

Purpose/Project Description: This funding would develop a suite of simulators capable of screening and evaluating new materials, light weight structures, and high value subsystems and components on both wheeled and tracked vehicles. It will provide the Army with an upgraded dynamic physical capability to screen and evaluate new materials. NRSEES will consist of three simulation platforms: a dynamic high frequency component reliability system, a roll-over safety system, and a high payload vibration system.

Item: Eye Safe Standoff Fusion Detection

Request: \$3,900,000

Account: Research and Development, Army

Line: 14
PE: 0602618A
Language: NA
Intended Recipient: ChemImage Corporation
Address: Pittsburgh, PA

Purpose/Project Description: Standoff sensors are needed to rapidly detect the presence of chemical, biological, explosive and IED threats. Because several of these sensors probe the sample with a laser beam, a key component of this program is to develop strategies to eliminate the laser hazard to both operators and bystanders. Technologies being investigated for standoff detection include short-wave infrared hyperspectral imaging, Raman spectroscopy and Laser Induced Breakdown Spectroscopy (LIBS). Each of these, operating alone, has demonstrated potential for limited standoff detection of chemical and biological agents, but with limitations for routine use. This program will further develop these sensor systems and use proven sensor fusion strategies to greatly enhance standoff chemical and biological sensing.

Item: Pediatric/Adolescent Trauma Resuscitation
Request: \$2,900,000
Account: Operations and Maintenance, Defense Wide
Budget Activity Number: 01
Sub-Activity Group Number: 0130 (Defense Health Program, Education and Training)
Language: NA

Intended Recipient: The Children's Hospital of Philadelphia
Address: Philadelphia, PA
Purpose/Project Description: Requested funds will be used to create a trauma, shock and cardiac arrest resuscitation test bed to discover, implement, and disseminate evidence-based scaled interventions adapted for resuscitation of infants, children and young adults. Investigators will specifically target the adaptation of adult medical equipment and treatment protocols commonly carried and learned by basic and advanced military and civilian personnel. This will enable rapid deployment and effective response in resource-limited combat, conflict and homeland disaster settings.

Item: Laser Scanning Technology
Request: \$3,000,000
Account: Research and Development, Army
Line: 17
PE: 0602624A
Language: NA

Intended Recipient: Co-Exprise
Address: Wexford, PA
Purpose/Project Description: Funding would be used to enable the utilization of laser scanning technology in order to shorten the time and lower the cost for resetting and modernizing the military's small arms and crew-served weapons.

Item: Battlefield Threat Detection System
Request: \$4,000,000
Account: Research and Development, Defense Wide

Line: 32
PE: 0603884BP
Language: NA
Intended Recipient: Compass Systems Inc.
Address: Johnstown, PA

Purpose/Project Description: Funds would be used to miniaturize existing battlefield threat detection capabilities and incorporate chemical and biological sensors available through Defense Threat Reduction Agency (DTRA) program developments. When fielded, the device could be operated by a single individual, replacing the 3 or 4 man team presently used to locate and document battlefield items. Standoff detection capabilities for the identification of chemical, biological and other threats are crucial because they mitigate the threats posed to the detection teams.

Item: Extreme Torque Density Propulsion Motor
Request: \$3,400,000
Account: Research and Development, Navy
Line: 35
PE: 0603513
Language: NA
Intended Recipient: Curtiss-Wright EMD
Address: Cheswick, PA

Purpose/Project Description: This project will design, manufacture, and demonstrate a full scale surface combatant ship advanced propulsion motor. The project will leverage a small scale Extreme Torque Density Propulsion Motor (XTM) being tested for future submarine application. A full scale XTM is required to evaluate acoustic performance, establish manufacturing processes and address adaptations for surface ships. While increasing motor output, XTM reduces motor size and weight -- providing increased greater shipboard flexibility and mission payload. This shipboard friendly motor increases operational reliability because it does not require exotic auxiliary support equipment. The XTM provides a major component not currently available for combatant surface ship electric propulsion plants, and ensures motor commonality across submarine and surface ship fleets.

Item: Adaptive Diagnostic Electronic Portable Testset (ADEPT)
Request: \$3,200,000
Account: Research and Development, Navy
Line: 99
PE: 0604307N
Language: NA
Intended Recipient: Mikros Systems Corporation
Address: Fort Washington, PA
Purpose: Funding will be used to advance the development an automated electronic system for maintenance, alignment, calibration, and error diagnosis of shipboard radar and other complex electronic systems. ADEPT was developed to improve readiness of the AN/SPY-1 family of phased array radars, which are an integral part of the Navy's Aegis program and ballistic missile defense initiatives. Fiscal year 2010 funds will support open systems

development of the ADEPT software to support radar and electronic systems for other Navy ship and submarine classes.

Item: Traumatic Brain Injury Technologies

Request: \$2,500,000

Account: Research and Development, Army

Line: 30

PE: 0603002A

Language: NA

Intended Recipient: DynaVox Technologies

Address: Pittsburgh, PA

Purpose/Project Description: Funding is requested to develop a specialized technological solution to address the long-term mental and physical effects of Traumatic Brain Injury (TBI). This solution will include a new handheld device which will provide organization and memory support, along with voice generation and communication support designed specifically for those with aphasia and TBI. There will be specialized software used by the device to allow the individual to easily move from the memory and organization functionality to communication functionality.

Item: Telepharmacy Robotic Medicine Delivery Unit

Request: \$2,000,000

Account: Research and Development, Army

Line: 30

PE: 0603002A

Intended Recipient: INRange Systems, Inc

Address: Altoona, PA

Purpose/Project Description: The Military and the Department of Veterans Affairs have an increasing number of patients with combat-related impairments to medication self-management, many of whom are located in Pennsylvania due to the high service rate of Pennsylvanians in the military and National Guard. Funds will be used to evaluate the clinical and economic efficiency of an FDA cleared remote medication management system that provides unit dose delivery of medications across the continuum of care. It could benefit those who have served our country, their families, the national general patient population and our healthcare system by reducing costs and increasing access by treating people in their homes.

Item: Threat Detection Technologies

Request: \$4,000,000

Account: Research and Development, Army

Line: 2

PE: 0601102A

Language: NA

Intended Recipient: Temple University

Address: Philadelphia, PA

Purpose/Project Description: The goal of this project is to automate object detection and recognition in images based on recent understanding of the human visual system and robust statistical computing methods. Working with Los Alamos National Lab and Purdue University,

the Center at Temple University will couple advanced laser technologies such as: laser filamentation, laser-induced breakdown spectroscopy, laser pulse shaping and robust laser design with hyperspectral detection, mass spectral detection and imaging methods to develop the most sensitive, selective and long range (up to 15 miles) remote detection of chemical species. Additional research will focus on a system to automate image understanding by multiscale extraction, characterization and annotation of complex, high-variability features. Applications include stand-off detection of improvised explosive devices, chemical mapping of cities and remote terrains, detection of hidden bunkers, weapons caches and chemical warfare agent stockpiles.

Item: Precision Static Balancing Demonstration Project

Request: \$1,000,000

Account: Research and Development, Army

Line: 8

PE: 0602211A

Language: NA

Intended Recipient: Marvel Manufacturing Company

Address: Stroudsburg, PA

Purpose/Project Description: Funding is requested to demonstrate the modernization of precision static balancing kits with balancing applications for rotors for helicopter rotors in use by the U.S. Army. Funding would be used to demonstrate the accuracy of this technology and equipment and would seek to demonstrate the cost-benefit and improvement in time and efficiency. This project was developed in an effort to support the Army's transformation to condition-based maintenance.

Item: Advanced Aluminum Solutions for Ship Design and Affordable Construction

Request: \$7,000,000

Account: Research and Development, Navy

Line: 46

PE: 0603573N

Intended Recipient: Alcoa

Address: Alcoa Center, PA

Purpose/Project Description: Requested funds will be utilized to address the cost of fabrication, assembly, and joining of aluminum marine structures through advanced aluminum designs that will offer enhanced performance at a lower cost. Specifically, the funds will be utilized to: 1) address ship construction cost through design, development, and testing of advanced marine structures, in cooperation with shipbuilders, prime contractors, and Navy architects; 2) build model structures to test potential improvements; 3) pursue the necessary materials qualification to introduce newer, advanced alloys for Navy use; and 4) educate both the Navy and industry on advanced joining techniques.

Item: Advanced Light-Weight Ceramic Armor

Request: \$2,200,000

Account: Research and Development, Army

Line: 5

PE: 0602105A

Intended Recipient: Morgan Advanced Materials and Technology

Address: St. Marys, Pennsylvania

Purpose/Project Description: The U.S. military has a requirement for new ground vehicles to employ lightweight, blast/ballistic resistant advanced armor materials that can be integrated into the design and operation of the vehicle. Requested funds will be used to build upon previously developed silicon carbide ceramic technology to develop low cost materials processing and fabrication methods for the accelerated development of silicon carbide ceramic vehicle armor applications to meet U.S. military vehicle armor requirements.

Item: Curve Plate Technology

Request: \$3,000,000

Account: Research and Development, Navy

Line: 18

PE: 0603236N

Language: NA

Intended Recipient: MAGLEV, Inc.

Address: McKeesport, PA

Purpose/Project Description: Funding will be used to advance naval engineering by helping to develop processes for joining various materials, resulting in savings of weight and cost. The developments will have a direct impact on advancements in ship hull technology.

Item: Drive System Composite Structural Component Risk Reduction Program

Request: \$4,000,000

Account: Research and Development, Army

Line: 31

PE: 0603003A

Language: NA

Intended Recipient: V. System Composites, Inc.

Address: Chester, PA

Purpose/Project Description: Funding will be used for engineering development of lightweight composite rotorcraft drive system components through design, analysis and testing. The benefits of composite drive system components include elimination of corrosion, less fatigue, significant reductions in weight, and lower acquisition, operation and support, and lifecycle costs.

Item: High Speed Optical Interconnects

Request: \$4,000,000

Account: Research and Development, Defense Wide

Line: 11

PE: 0602303E

Intended Recipient: Lightwire

Address: Allentown, PA

Purpose/Project Description: Requested funds will be used to accelerate the development of high speed optical interconnects needed to enable the next generation of DOD computing needs.

Item: 1187 36mm Advanced Countermeasure
Request: \$2,000,000
Account: Procurement Ammunition, Navy and Marine Corps
Line: 8
PE: NA
Language: NA

Intended Recipient: Alloy Surfaces Company

Address: Chester Township, PA

Purpose/Project Description: Funds would be used to develop a spectrally tailored infrared decoy required to defeat the discrimination logic of advanced missile threats. Increasing proliferation of advanced man-portable air-defense systems (MANPADS) to enemy combatants has created the need for a more advanced decoy. An improved decoy will improve effectiveness against traditional and advanced missile threats with improved covertness.

Item: Chem-Bio Resistant Clothing
Request: \$3,000,000
Account: Research and Development, Defense Wide
Line: 14
PE: 0602384BP
Language: NA

Intended Recipient: Arkema Inc.

Address: King of Prussia, PA

Purpose/Project Description: Funds will develop breathable chemical/biological protection for military personnel. Protective clothing represents a first line of defense to protect an individual at risk of exposure.

Item: Vanadium Safety Readiness Program
Request: \$4,200,000
Account: Research and Development, Defense Wide
Line: Defense Health Program
PE: NA
Language: NA

Intended Recipient: Bear Metallurgical Corp.

Address: Butler, PA

Purpose/Project Description: Funding would be used to conduct a study of the health and safety risks associated with the use of vanadium, which is currently used in many steel applications because of its strength and light weight. Recent domestic and international regulatory opinions regarding the health risks of vanadium pentoxide, the most extensively used form of vanadium commercially, suggest that potential health risks associated with exposure to vanadium warrant further study.

Item: Wearable Hemorrhagic Shock Monitor
Request: \$2,000,000
Account: Research and Development, Army
Line: 30

PE: 0603002A
Language: NA
Intended Recipient: BodyMedia, Inc.
Address: Pittsburgh, PA

Purpose/Project Description: Funds will be used to develop a wearable hemorrhagic shock monitor. Currently, medics are forced to rely on manual measurements of standard vitals that are taken through “snap-shot” measurements, including blood pressure, pulse, and respiration rate, which do not indicate trends in the physiological response to the injury. A system that can accurately monitor the complex physiological signals of a wounded soldier would significantly improve the ability of a medic to effectively triage and treat casualties with priority and timely intervention.

Item: Small Manufacturers Defense Initiative Phase II
Request: \$2,500,000
Account: Research and Development, Army
Line: 32
PE: 0603004

Intended Recipient: Catalyst Connection
Address: Pittsburgh, PA

Purpose/Project Description: The Small Manufacturers Defense Initiative (SMDI) is a quick response manufacturing service supply chain protocol for the U.S. Army Armament Research, Development and Engineering Center (ARDEC) site in New Jersey. SMDI Phase I integrated many small and medium sized Pennsylvanian manufacturers into the ARDEC procurement system. Funding for Phase II will allow for the continued development and enhancement of the software and technology used in the procurement process. This funding will also provide for the SMDI system to be expanded to four other ARDEC sites and will allow for additional supplier qualification and technical assistance for Pennsylvanian manufacturers.

Item: Strike Aircraft Weapons Bay Attenuation & Stores Integration Technology
Request: \$1,100,000
Account: Research and Development, Air Force
Line: 8
PE: 0602201F
Language: NA

Intended Recipient: Combustion Research & Flow Technology, Inc.
Address: Pipersville, PA

Purpose/Project Description: The funds would be used to support the development of full-scale hardware for flight test demonstration of flow control technology that mitigates dangerously high aero-acoustic loads in the weapons bays of fifth-generation tactical aircraft. Full scale demonstration prototypes will be designed and developed for aircraft integration.

Item: Integrated Power System Converter
Request: \$3,200,000
Account: Research and Development, Navy
Line: 35
PE: 0603513N

Language: NA

Intended Recipient: Converteam, Inc.

Address: Pittsburgh, PA

Purpose/Project Description: Funding will expand the capacity of an integrated power system converter, which provides capacity for future system upgrades, improved ship survivability, greater flexibility in ship design, and reduced operating and support costs. The Navy initiated the Integrated Power System (IPS) program in 1995 to develop all-electric power systems that can be used in any class of ship. The Main Power Converters form the heart of the IPS concept, and with this development, will provide significant advantages in size, weight and cost reduction across all IPS equipment. In addition, this development will significantly simplify the insertion of advanced weapons.

Item: Self Powered Prosthetic Limb Technology

Request: \$3,000,000

Account: Research and Development, Army

Line: 28

PE: 0602787A

Language: NA

Intended Recipient: KCF Technologies

Address: State College, PA

Purpose/Project Description: Funding will be used to develop an energy harvesting device as a component integrated into a lower extremity prosthetic limb. Current lower limb prosthetic technology has improved dramatically with the invention of computer controlled knee joints. The added functionality of these computer controlled knees greatly aid injured soldiers trying to get back to active duty. However, a major drawback of these prostheses is the requirement to recharge the on board battery approximately every 24 hours. The purpose of this research is to develop further an energy harvesting device as a component integrated into a lower extremity prosthetic limb. The device will automatically recharge the batteries during normal walking and running activity.

Item: Advanced Transparent LAS Glass Ceramic Armor Systems for Force Protection

Request: \$6,000,000

Account: Research and Development, Defense Wide

Line: 25

PE: 0603122D8Z

Language: NA

Intended Recipient: SCHOTT DiamondView Armor Products

Address: Boothwyn, PA

Purpose/Project Description: Funding will be used to develop the next generation of glass ceramic armors for the warfighter. SCHOTT is currently achieving 20-40 percent weight savings and multi-hit capability with the introduction last year of transparent armors based on using Lithia-Alumina-Silicate (LAS) glass ceramics in combination with traditional transparent plastics. This program would seek to optimize the materials and manufacturing needed to produce lightweight, affordable, armor that is ballistically and optically superior to current fielded systems.

Item: Expeditionary Water Purification System
Request: \$3,500,000
Account: Research and Development, Defense Wide
Line: 41
PE: 0603712S
Language: NA

Intended Recipient: ALION Science & Technology

Address: Pittsburgh, PA

Purpose/Project Description: This program will develop a road mobile, air transportable system to provide 300,000 gallons per day of potable water to expeditionary military forces and to support emergency civil operations. An aircraft carrier configured water purification system, designed to generate in excess of 300,000 gallons per day of potable water from seawater, has been developed within the Navy's Expeditionary Unit Water Purification (EUWP) program. The system can produce a range of product water qualities from potable to ultra pure, deionized water. Source waters contaminated by nuclear, biological or chemical (NBC) contaminants can also be processed to reduce these contaminants to an acceptable short term level.

Item: Improved Thermal Batteries for Guided Munitions
Request: \$3,500,000
Account: Research and Development, Army
Line: 140
PE: 0605805A
Language: NA

Intended Recipient: EnerSys Advanced Systems

Address: Horsham, PA

Purpose/Project Description: Funds would be used to develop a low-cost, high-rate production capability for improved thermal batteries through the use of high quality materials and automated manufacturing. This will be achieved through the production of highly energetic, high purity powdered materials that are of uniform quality and through automated production of battery electrodes and components, followed by high-rate automated assembly of the thermal battery.

Item: Mission Critical Power System Reliability Surveys
Request: \$2,000,000
Account: Operations and Maintenance, Air Force
BA: 4
SA: 510
Language: NA

Intended Recipient: Eaton Corporation

Address: Moon Township, PA

Purpose/Project Description: This program will perform risk assessments of redundant power and related mission critical infrastructure systems to identify system and equipment component weaknesses that may result in breach of operations, security, and other threats. Results and recommendations from the survey will serve as a basis to implement corrective actions needed to support mission critical operations for the warfighter.

Item: Remote Vehicle Borne Improvised Explosive Device (VBIED) Detection and Defeat
Request: \$2,500,000
Account: Research and Development, Defense Wide
Line: 25
PE: 0603122D8Z
Language: NA
Intended Recipient: RE2, Inc.
Address: Pittsburgh, PA
Purpose/Project Description: Requested funds will be used to integrate DoD-funded technologies, including RE2's automatic tool-change robotic arm and VBIED detection and defeat tools, to allow an operator to remotely detect and disable VBIEDs. The proposed system eliminates the need for an explosive ordnance disposal (EOD) operator to put on a bomb suit and approach a vehicle containing explosives.

Item: Photonic Integration Foundry
Request: \$3,000,000
Account: Research and Development, Navy
Line: 61
PE: 0603739N
Language: NA
Intended Recipient: Lehigh University
Address: Bethlehem, PA
Purpose/Project Description: Requested funds would be used to deliver enabling photonic integrated circuit technologies required for next generation Navy avionics. Current photonic subsystems assembled from discrete components are not sufficiently ruggedized and do not fully address the Navy's needs for dramatic reductions in size, weight and power. Providing photonic systems to the Navy at a cost effective price would allow them to be integrated to naval airplanes, which would in turn lower the size and weight of the avionics package.

Item: Medium Caliber Parts Upgrade
Request: \$3,100,000
Account: Research and Development, Army
Line: 140
PE: 0605805A
Language: NA
Intended Recipient: Medico Industries, Inc.
Address: Wilkes-Barre, PA
Purpose/Project Description: Funding will be used to assess production base capabilities and needs over the acquisition life cycle of various munitions. This program will also address the production capability of ammunition, including the transition to type classification and production, and the ability of the production base to cost effectively produce quality ammunition products on schedule.

Item: Integrated Flexible Electronics

Request: \$2,500,000
Account: Research and Development, Army
Line: 2
PE: 0601102A
Language: NA
Intended Recipient: Plextronics
Address: Pittsburgh, PA
Purpose/Project Description: The funding would provide for the development of new materials and technology for flexible electronics. This program will have broad impact spanning multiple military applications, from training simulations to use in command centers and by deployed forces. The combination of these materials and technologies will lead to soldiers receiving information in real time on maps and displays, improving both military communications and soldier safety.

Item: Advanced Naval Logistics
Request: \$3,500,000
Account: Research and Development, Navy
Line: 61
PE: 0603739N
Language: NA
Intended Recipient: MCA Solutions, Inc.
Address: Philadelphia, PA
Purpose/Project Description: Requested funding would be used to complete the Navy implementation of COTS software, complete its integration into the Navy Enterprise Resource Planning environment and investigate its applicability to all services. The Naval Logistics Readiness Research Center represents a partnership with several government, academic, and commercial entities. It has made significant progress in implementing cutting edge tools and techniques in forecasting and requirements determination whose end purpose is to reduce investment in spare parts without sacrificing readiness. These advancements have laid the groundwork for a Navy Enterprise Resource Planning (ERP) sparing solution that leverages the best of both legacy and commercial products. This will result in improved warfighter readiness, reduced inventory, significant cost avoidance and savings, improved data availability, and increased flexibility in supporting warfighting scenarios and surge requirements.

Item: EC-130J Multi-Mission Upgrades
Request: \$6,000,000
Account: Research and Development, United States Special Operations Command
Line: 245
PE: 1160403BB
Language: NA
Intended Recipient: 193rd Special Operations Wing
Address: Southampton, PA
Purpose/Project Description: Funding will be utilized to modify the existing EC-130J/C-130J aircraft at the 193rd Special Operations Wing. The program will expand existing capability to a multi-mission configuration to support additional special operations forces capabilities. This

includes, but is not limited to upgrades of analog systems to digital and focus on roll-on/roll-off designs in the modular configuration.

Item: Navy Production Capacity Improvement Project at Lehigh Heavy Forge
Request: \$4,500,000
Account: Defense Production Act
Line: NA
PE: NA
Language: NA

Intended Recipient: Lehigh Heavy Forge Corporation

Address: Bethlehem, PA

Purpose/Project Description: Lehigh Heavy Forge is the only domestic producer with the capability and expertise to produce the large complex forgings required for the Nuclear Powered Navy. The Navy depends on Lehigh Heavy Forge to forge nearly 100 percent of the ship shafts used by its surface and sub-surface combat vessels. Requested funds will be used to increase its capacity to meet the Navy's demand for specific forged components.

Item: Ceramic Membrane Battery Systems
Request: \$4,000,000
Account: Research and Development, Army
Line: 18
PE: 0602705A
Language: NA

Intended Recipient: MaxPower, Inc

Address: Harleysville, PA

Purpose/Project Description: Requested funds would be used to develop a high energy density ceramic based lithium air battery to reduce the number of batteries that the warfighter has to carry. As a result of the U.S. Army's interests and needs, the objective is to develop a ceramic membrane for a lithium air battery system that has "superior" high energy density [10(x) times more], is cost effective and is safe. This technology is applicable to the Army's Advanced Technology Objectives for the Dismounted Soldier and for Portable Electronic & Communication Systems. It will also be applicable to all battery applications currently found in the U.S. Army inventory, and supports all U.S. based battery technology efforts.

Item: Philadelphia Navy Yard Infrastructure Improvements
Request: \$4,000,000
Account: Operations and Maintenance, Defense Wide
Budget Activity Number: 4
Sub-Activity Group Number: 260
Language: NA

Intended Recipient: Philadelphia Navy Yard

Address: Philadelphia, PA

Purpose/Project Description: Funding will be used to replace and upgrade critical infrastructure such as electrical transmission facilities, gas, steam and water lines, streets and sidewalks.

Item: Second Sourcing of Critical Helicopter Parts

Request: \$3,000,000

Account: Research and Development, Army

Line: 172

PE: 0708045A

Language: NA

Intended Recipient: NP PRECISION

Address: Folcroft, PA

Purpose/Project Description: Requested funds would support the costs of the production, testing and approval of second source manufacturers of rotorcraft critical flight safety spares/ parts for military and cargo helicopters, such as the CH-47 Chinook, for which parts are now in critical shortage and threaten sustainment of our military efforts in Iraq, Afghanistan, and elsewhere.

Item: Mismatch Repair Derived Antibodies

Request: \$4,500,000

Account: Research and Development, Defense Wide

Line: 6

PE: 0601384BP

Language: NA

Intended Recipient: Morphotek Inc.

Address: Exton, PA

Purpose/Project Description: Funds will be used to develop new medicines to treat staphylococcus-derived bioweapons. New potent medicines will reduce the threat posed by Staphylococcal-based bioweapons and make their use as agents of terror or weapons minimal. Mismatch repair technology is being employed to develop anti-biowarfare medicines, in particular antidotes against staphylococcus-based bioweapons. Previous work has resulted in the discovery of potent lead drugs that with supplemental funding will advance to preclinical studies required as part of a package required to file an Investigational New Drug (IND) application for proof-of-concept in human trials. Mismatch repair derived medicines can serve as potent drugs for the prophylactic and therapeutic treatment of military personnel and civilian populations at risk for exposure to biowarfare.

Item: Domestic Production of Nanodiamond for Military and Commercial Applications

Request: \$2,500,000

Account: Research and Development, Army

Line: 140

PE: 0605805A

Language: NA

Intended Recipient: NanoBlox Inc.

Address: University Park, PA

Purpose/Project Description: Requested funds will be used to establish a domestic production source for nanodiamond for military and commercial applications, including ballistics, ordnance de-mil, lubrication, Teflon replacement, lightweight armor and fuel efficiency.

Item: Electronic System Integration
Request: \$3,200,000
Account: Research and Development, Army
Line: 6
PE: 0602120A
Language: NA
Intended Recipient: Sechan Electronics
Address: Lititz, PA
Purpose/Project Description: Requested funds will be used to develop an electronic data distribution system that accepts any vehicle's remote weapon, sensor and communication sub-system within one distributed network, giving warfighters "plug and play" systems integration capability.

Item: Conversion of Municipal Solid Waste to Renewable Diesel Fuel
Request: \$3,150,000
Account: Research and Development, Army
Line: 50
PE: 0603734A
Language: NA
Intended Recipient: Covanta Energy
Address: Harrisburg, PA
Purpose/Project Description: This program will provide an assessment of commercially-available technologies and examine existing best practices for using municipal solid waste, and potentially other feedstocks, to create renewable diesel. DOD is working to obtain 25 percent of its energy from renewable sources by 2025, and may be able to utilize viable, sustainable, economic and environmentally-friendly processes to convert ordinary municipal household and commercial solid waste into synthetic gas and liquid fuels.

Item: COTS Technology for Improved Rural Healthcare Delivery
Request: \$3,000,000
Account: Research and Development, Army
Line: 30
PE: 0603002A
Language: NA
Intended Recipient: Saint Francis University's Center of Excellence for Remote and Medically Under-Served Areas (CERMUSA)
Address: Loretto, PA
Purpose/Project Description: CERMUSA, under the direction of the U.S. Army, serves as a technology test bed readily available to the Armed Forces for test and evaluation of both military-spec and commercially-available hardware and software. Requested funds will be used to integrate commercial-off-the-shelf hardware and software to improve delivery of healthcare to service members and their families residing in rural areas.

Item: Early Responder Training
Request: \$1,250,000
Account: Research and Development, Defense Wide

Line: 25
PE: 0603122D8Z
Language: NA
Intended Recipient: Saint Joseph's University
Address: Philadelphia, PA
Purpose/Project Description: Funds will be used to make training materials available to first responders in a secure digital format. The secure mobile delivery system developed under this project will provide operational forces, military and civilian first responders, and civilian law enforcement personnel with current information to properly detect, deter, prevent, defeat, mitigate and respond to incidents.

Item: Extremity War Trauma Research Grant Program
Request: \$2,000,000
Account: Research and Development, Army
Line: 30
PE: 0603002A
Intended Recipient: The Extremity War Trauma Research Foundation
Address: Pittsburgh, PA
Purpose/Project Description: The Extremity War Trauma Research Foundation (EWTRF) will support the ongoing effort to improve the treatment and rehabilitation of our wounded war fighters following a traumatic orthopedic injury by providing research opportunities that directly impact their care. The EWTRF will address such needs and work in synergy with similar organizations to fund directed research required to tackle these broad areas of research emphasis. The EWTRF will solicit and review applications, from young investigators or senior investigators with a new research line, whose proposals are in line with traumatic orthopedics related to blast injuries. The EWTRF will focus on funding peer-reviewed translational projects for investigators who can provide proof of concept for unique new research ideas and long-term research interests that will directly impact the care of our wounded warfighters.

Item: Electromagnetic Gun Initiative
Request: \$1,500,000
Account: Research and Development, Army
Line: 9
PE: 0602270A
Language: NA
Intended Recipient: Silicon Power Corporation
Address: Malvern, PA
Purpose/Project Description: Requested funds will be used to develop further advanced Lightweight Silicon Switch (LSS) technology for use as the primary pulse-power switching element in a mobile electromagnetic gun system (EM Gun). Funds would finance the development of an enhanced 125mm switch based on LSS technology and design a 150mm LSS switch.

