Name of Potential Recipient: Accipiter Systems, Inc.
Location: Pittsburgh, PA
Amount: $3,800,000
Project Name: Next Generation Communications Systems

Purpose/Project Description: If awarded, funding will be used to design and build a highly interoperable, energy efficient communication system to be utilized in a wide range of fixed and mobile, land, airborne and ship borne applications such as sensor networks for the U.S. Armed Forces.

Name of Potential Recipient: Alcoa
Location: Alcoa Center, PA
Amount: $7,000,000
Project Name: Advanced Aluminum Solutions for Ship Design and Affordable Construction

Purpose/Project Description: If awarded, Alcoa will help the Navy achieve its weight, cost, and survivability objectives for the Littoral Combat Ship (LCS), Ship-to-Shore Connector (SSC), and the Joint High Speed Vessel (JHSV) programs by addressing the cost of fabrication, assembly, and joining of aluminum marine structures through advanced aluminum designs to offer enhanced performance at a lower cost.

Name of Potential Recipient: Alloy Surfaces Inc.,
Location: Chester Township, PA
Amount: $2,000,000
Project Name: ASC-1187 36mm Advanced Countermeasure Decoy

Purpose/Project Description: The MJU-49/B countermeasure decoy for the US Navy was designed in 1995 to provide increased aircraft survivability and protection against Infrared guided threats when used either singly or in combination with other infrared countermeasures. If awarded, Alloy Surfaces will initiate operational test and evaluation of the advanced ASC -1187 36mm decoy to provide increased aircraft survivability and protection against outside advances in missile technology.

Name of Potential Recipient: Analytical Graphics Inc.
Location: Exton, PA
Amount: $3,200,000
Project Name: Deployable Space and Electronic Warfare Analysis Tools

Purpose/Project Description: If awarded, funding will be used to customize commercially available technologies for the Army space mission. This project would allow the Department of Defense to be able to fully assess effectiveness of processing satellite, aircraft, and ground based time dynamic position and attitude information. This type of modeling and simulation capacity should provide mission planners with a near real-time assessment platform to support operation centers worldwide.

Name of Potential Recipient: Arkema, Inc.
Location: King of Prussia, PA
Amount: $4,000,000
Project Name: Chemical and Biological Resistant Clothing

Purpose/Project Description: If awarded, funding will be used to develop a 21st century chemical and biological resistant suit for soldiers. Chemical and biological agents represent one of the most challenging terrorist-driven threats faced by soldiers and civilians. The Joint Service Lightweight Integrated Suit Technology (JSLIST) has not been updated in more than ten years.

Name of Potential Recipient: Aviation Recorders, L-3 Communications
Location: Annville, PA
Amount: $3,500,000
Project Name: Army National Guard Cockpit Voice Recorder/Flight Data Recorder CH-47D Modification

Purpose/Project Description: If awarded, funding will be used to procure and install an initial 30 ship sets of the competitively selected APR 2500 CVR/FDR for installation on-board CH-47D (Chinook) helicopters assigned to Pennsylvania's Army National Guard aviation units. Cockpit Voice Recorders/Flight Data Recorders are standard equipment on all commercial airliners carrying crews and passengers, and are indispensable in monitoring aircrew interaction as well as key flight component performance prior to catastrophic events. Army rotary wing aircraft have recently identified that cockpit voice recorders as a valid service requirement on-board its CH-47 "F" Cargo Aircraft.

Name of Potential Recipient: Axion Power
Location: New Castle, PA
Amount: $3,000,000
Project Name: Hybrid PbC Ultracapacitor for Marine Combat Vehicles

Purpose/Project Description: If awarded, funding will be used to develop a hybrid ultracapacitor, which will provide high energy, high power source capabilities, and merge the best qualities of a battery (energy) with those of a super capacitor (power). The Hybrid PbC Ultra capacitor 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% lighter. Axion Power estimates that this more environmentally friendly technology will use 60% less lead than typical lead acid batteries.

Name of Potential Recipient: Bear Metallurgical Corporation
Location: Butler, PA
Amount: $4,200,000
Project Name: Vanadium Safety Readiness

Purpose/Project Description: Recent domestic and international regulatory opinions regarding the health risks of vanadium pentoxide, the most extensively used form of vanadium, have been largely based on limited research conducted by the National Toxicology Program (NTP). If awarded, Bear Metallurgical Corporation in cooperation with the vanadium microalloyed steel industry, academia and the US Army will continue research designed to fill data gaps on the environmental/exposure risks of vanadium in military applications.

Name of Potential Recipient: Blue Ridge Pressure Casting
Location: Wrightsville, PA
Amount: $2,300,000
Project Name: Superior Weapons Systems through Castings (SWSC)

Purpose/Project Description: If awarded, funding will be used for the development of new castings and technologies targeting lighter weight, better performing parts for both legacy and new weapons systems using foundry base and casting expertise.

Name of Potential Recipient: Body Media
Location: Pittsburgh, PA
Amount: $1,500,000
Project Name: Wearable Hemorrhagic Shock Monitor

Purpose/Project Description: Body Media, in partnership with the TATRC, will develop a prototype of the Hemorrhagic Shock Monitor and complete a number of pilot clinical laboratory studies to model highly intelligent and predictive algorithms to enable the monitoring of

physiological responses to hemorrhagic shock. The ability to actively monitor the complex physiological signals of a wounded soldier will significantly improve a combat medic's chances of employing effective triage and treat casualties with priority and timely intervention.

Name of Potential Recipient: Catalyst Connection
Location: Pittsburgh, PA
Amount: $2,500,000
Project Name: Small Manufactures Defense Imitative Phase II

Purpose/Project Description: In order to meet the challenges of rapidly changing environments, the Department of Defense must organize all available resources, skills, and innovative technologies to manufacture a complex array of supplies quickly and efficiently to meet the current and future demand for the national defense. The Small Manufacturers Defense Initiative (SMDI) is a quick response manufacturing service supply chain protocol developed for the U.S. Army ARDEC headquarters in Picatinny Arsenal. SMDI Phase I has successfully integrated many Pennsylvania small and medium sized manufacturers with the ARDEC procurement system. If awarded, funding will be used to develop the SMDI supply chain process, provide technical support to PA manufacturers, and expand to the four sites of the U.S. Army Armament, Research, Development, and Engineering Center (ARDEC).

Name of Potential Recipient: C&D Technologies
Location: Blue Bell, PA
Amount: $2,500,000
Project Name: Advanced Energy Storage Development for Renewable Electrical Energy Generation

Purpose/Project Description: If awarded**,** funding will be used to develop a new lead-acid battery specifically designed to meet the unique power storage needs of renewable energy systems making them more efficient and cost competitive. Renewable energy sources such as wind and solar are indisputably abundant and clean sources of energy; however, all of these sources are handicapped by the limiting factor of intermittent supply. Because of this inability to efficiently collect and distribute the power in a cost effective, consistent, and reliable manner the adoption of many renewable energy projects have been stymied. C&D has the technical expertise to design a battery uniquely suited for renewable energy power application.

Name of Potential Recipient: Chaperone Technologies, Inc.
Location: East Stroudsburg, PA
Amount: $2,000,000
Project Name: Development of hsp70 Inhibitors as Therapeutics Against Category A Biothreat Agents and other Bacterial Pathogens

Purpose/Project Description: This project will continue the successful development of Chaperone's antimicrobial drugs to be used in the event of exposure to weaponized Category A biowarfare pathogens or resistant battlefield infections such as deadly *acinetobacter* infections now

being encountered by wounded soldiers in Iraq and Afganistan. Chaperone is currently in collaboration with the Department of the Army Research Development & Engineering Command and Edgewood Chemical/Biological Center (Aberdeen, MD) to conduct basic research to develop of hsp70 inhibitors and conduct preclinical development (and subsequent human trials) in collaboration with the Army.

Of the requested $2.0M, up to $500,000 is to be allocated for the acquisition by East Stroudsburg University (ESU) for Nuclear Magnetic Resonance (NMR) imaging equipment that will have a significant role in this proposed project. NMR is the primary method for determining structures of small molecules because it can be applied to such a wide variety of structures, provides rapid results, and a wide range of experiments. Through the acquisition of an NMR, ESU will expand its physical sciences capabilities and further enable Chaperone and ESU to collaborate on the design of new antimicrobial compounds to be used against Category A biowarfare pathogens, battlefield wound infections, and other antmicrobial programs of interest to the Army.

Name of Potential Recipient: The Children's Hospital of Philadelphia
Location: Philadelphia, PA
Amount: $2,900,000
Project Name: Pediatric/Adolescent Trauma and Resuscitation

Purpose/Project Description: Innocent children caught in the middle of war are being injured on the front lines. The Children's Hospital of Philadelphia, if awarded, will create the world's most comprehensive child and adolescent trauma, shock and cardiac arrest resuscitation test bed to discover, implement, and disseminate evidence-based scaled interventions for resuscitation of infants, children and young adults. Information acquired through this research would target saving the lives of children who are injured on the front lines, a tragedy that is occurring more as non-state actors use asymmetric tactics to carryout attacks.

Name of Potential Recipient: Chi Systems
Location: Fort Washington, PA
Amount: $2,850,000
Project Name: HapMed Combat Medic Trainer

Purpose/Project Description: This project aims to help soldiers and combat medics acquire and maintain some of the most crucial battlefield lifesaving skills such as tourniquet application, needle chest decompression, and emergency cricothyrotomy, which treat the top three leading causes of preventable death on the battlefield. If awarded, funds will go toward the building of prototype 1) leg tourniquet trainers for testing and 2) design and build needle chest decompression trainers so that a multitude of soldiers will be able to learn these life saving techniques. HapMed can provide cost-effective and realistic training to combat medics, soldiers, and civilian first responders.

Name of Potential Recipient: Clear Align
Location: Eagleville, PA
Amount: $2,700,000
Project Name: Low Cost Laser Module Assembly (LC-LMA)

Purpose/Project Description: Clear Align is developing a LC-LMA for advanced low cost acoustic sensor critical to submarine operations in the littoral and mine-infested water. If awarded, funding will be used to complete development of a tunable laser capable of supporting multiple sonar sensor arrays each with thousands of sensors, build a new submarine compatible laser module, and conduct a critical real world testing and evaluation. Presently 14 lasers are required to achieve technical requirements. If this is reduced to 4, significant inventory savings would be realized.

Name of Potential Recipient: Compass Systems, Inc.
Location: Johnstown, PA
Amount: $4,000,000
Project Name: HAMMER (Handheld Apparatus for Mobile Mapping and Expedited Reporting

Purpose/Project Description: HAMMER is a one man system and its ability to record and transmit data allows remote commanders or headquarters units to know precisely what the battlefield looks like, including threats that can be detected from a distance. When fielded, a HAMMER operated by an individual soldier will replace a 3 or 4 man team presently used to locate and document battlefield items. If awarded, funding will be used to support the Defense Threat Reduction Agency Chemical and Biological Science &Technology office with a new, force multiplier technology to link field operations to commanders with critical data.

Name of Potential Recipient: Converteam, Inc.
Location: Pittsburgh, PA
Amount: $5,200,000
Project Name: Integrated Power Systems (IPS)

Purpose/Project Description: The IPSC consists of power electronics configured to control the performance of the ship's propulsion motors, ship service distribution and high power weapons or sensors. If awarded, funding will be used to design the prototype drive, controller programming, and build and conduct a 5MW scale demonstration. If successful, these technological development will provide significant advantages in size, weight, and cost reduction across all IPS equipment (generators, switchboards, power electronics, propulsion motors system filters).

Name of Potential Recipient: Crucible Compaction Metals
Location: Oakdale, PA
Amount: $5,200,000
Project Name: Building a National Assert for Hot Isostatic Processing (HIP) of Strategic and Critical Materials

Purpose/Project Description: If awarded, funding will be used to design a very large Hot Isostatic Processing (HIP) capable of manufacturing large critical components for the military and industrial base including: U.S. Navy critical marine hardware; advanced military aviation turbine engines; ultra-high efficiency land-based gas turbines; and critical components for steel making and oil production. HIP uses a combination of high gas pressure and temperature to consolidate metallic or ceramic powders, to heal internal defects in castings, and/or to promote solid-state welding.

Name of Potential Recipient: Curtiss Wright Electromechanical Division (EMD)
Location: Cheswick, PA
Amount: $3,400,000
Project Name: Extreme Torque Density Motor (XTM)

Purpose/Project Description: If awarded, funding will support continued development of a full scale Extreme Torque Density Motor (XTM) prototype to validate its applications for surface ship systems and in accordance with the CG(X) ship program schedule. XTM motors will be less than one-half the size and volume of existing propulsion induction motors and 30% of the weight. The XTM is an advanced motor with unmatched torque density, and has been selected for placement on the Navy's next generation Ballistic Missile Submarines (SSBNs).

Name of Potential Recipient: Drexel University
Location: Philadelphia, PA
Amount: $4,000,000
Project Name: Non-Thermal Plasma Wound Treatment

Purpose/Project Description: If awarded, funding will be used to develop a non-thermal plasma device to provide rapid and effective treatment of soldiers for battlefield wounds (burns, traumatic wounds, etc) including sterilization, blood coagulation and the enhancement of the wound healing process. The Non-Thermal Plasma Wound Treatment system will sterilize wounds by destroying bacteria and induce blood coagulation and rapid tissue regeneration using plasma created by a non-thermal atmospheric Dielectric Barrier Discharges. Drexel University has previously demonstrated that this plasma discharge 1) sterilizes fresh cadaver and non-human mammalian tissue within a few seconds after application without any detectable visible or histological damage, 2) penetrates about 1 mm under the surface of buffer solution to deactivate bacteria, and 3) results in rapid blood coagulation and tissue regeneration in testing with human cadaver spleens and mice.

Name of Potential Recipient: DSN Innovations
Location: Pittsburgh, PA
Amount: $8,200,000
Project Name: HIPER (Highly Integrated Production for Expediting RESET)

Purpose/Project Description: After Iraq and Afghanistan, our military will have to reset its equipment. The Highly Integrated Production for Expediting RESET (HIPER) program will utilize laser scanning technology at Anniston Army Depot to (1) quickly determine battle damaged and/or defective parts that need replacing, avoiding the need to replace good parts, and 2) rapidly determining if a part is non-conforming *before* it is inserted into a weapon (and subsequently has to be replaced). If awarded, funding will be used to employ laser-scanning technology to significantly shorten the time and lower the cost for resetting and modernizing the military's small arms and crew-served weapons.

Name of Potential Recipient: DynaVox Technologies
Location: Pittsburgh, PA
Amount: $2,500,000
Project Name: Traumatic Brain Injury Technology Development

Purpose/Project Description: DynaVox Technologies proposes to develop a specialized solution that will include a new, miniaturized handheld cell phone device which will provide organization and memory support, along with voice generation and communication support designed specifically for those with aphasia and Traumatic Brian Injury (TBI). If awarded, funding would also go toward giving the device GPS functionality to enable those with TBI to find a desired location and allow caregivers and family members to locate an individual if he/she is lost.

Name of Potential Recipient: Eaton Corporation
Location: Moon Township, PA
Amount: $3,200,000
Project Name: Integrated Alternative Power Systems (IAPS) –Navy High Shock 100 Amp Current Limiting Circuit Breaker

Purpose/Project Description: The IAPS program will develop and demonstrate critical pieces of an advanced power distribution system required for the secure and efficient integration of multiple power sources (utilities, legacy generators, alternative power sources, etc.) into an advanced intelligent micro-grid. Using a multiple phase approach, Eaton will: 1) develop the hardware and software for the optimal integration of wind and solar power, 2) develop technology to integrate fuel cells and Plug-in Hybrid Electric Vehicles with the overall system, and 3) combine all power sources to assure maximum energy security and efficiency of the system.

Name of Potential Recipient: The Extremity War Trauma Research Foundation
Location: Pittsburgh, PA
Amount: $2,000,000
Project Name: The Extremity War Trauma Research Foundation

Purpose/Project Description: The Extremity War Trauma Research Foundation (EWTRF) identifies and funds research excellence in the area of extremity war trauma. If awarded, funding will be used to enhance the quality of life for our armed services and civilians through improved research in the treatment of traumatic orthopedic extremity injuries including techniques of debridement, antibiotic treatment and infection control, management of open fractures, abnormal bone regrowth (heteropic ossification), regenerative medicine treatments for segmental bone defects, and limb regeneration, as well as the potential development of improved amputation techniques and outcomes.

Name of Potential Recipient: General Dynamics Ordinance and Tactical Systems
Location: Scranton, PA
Amount: $4,600,000
Project Name: Ammunition Production Base Support (Scranton AAP)

Purpose/Project Description: Scranton AAP was designated an "inactive" facility from 1992 to 2002 and was re-designated an "active" facility in 2002. Despite reactivation, the military funding for updating the equipment and facility at Scranton AAP has been inadequate. If awarded, funding will be used to modernize the Scranton Army Ammunition Plant through the following capital improvement projects: Holcroft #3 Burners upgrades; Automatic Handling Equipment for Sawa; and to acquire the Holcroft #1 Polymer Quench capability.

Name of Potential Recipient: Gentex Corporation
Location: Carbondale, PA
Amount: $5,000,000
Project Name: Ground – Modular Advanced Combat Helmet (G-MACH)

Purpose/Project Description: The G-MACH is the centerpiece of the Mounted Soldier System. It provides a fully integrated headgear system featuring increased survivability at a reduced weight, Trauma Brain Injury (TBI) sensors, next generation face/eye protection with either single or multi-wavelength laser protection, and increased combat effectiveness because of the wireless/cordless communications and helmet mounted display. If awarded, funding will be used to design, develop and produce a single, fully integrated, mission capable helmet for the mounted soldier community. It will provide soldiers the ability to fight effectively from the vehicle platform or dismounted in a complex urban environment and ultimately help save lives by upgrading the oldest helmet used in the Army.

Name of Potential Recipient: Global Seating Systems LLC
Location: Exton, PA
Amount: $5,000,000
Project Name: Next Generation Protective Seat

Purpose/Project Description: A next generation, modular seat is required to address the safety of all soldiers. Unlike current systems that are single stage and tuned for one specific occupant weight and one specific dynamic blast, the Next Generation Protective Seat will (i) sense the weight of the occupant and blast pulse and automatically adjust the seat energy attenuating system to that dynamic profile and (ii) recover for subsequent events. If awarded, funding would be used to continue the development of the next generation military seating system with specific focus on mine/IED blast and occupant crash protection. The system will ultimately sense an occupant's weight, the blast acceleration and adjust the seating to minimize the acceleration of the occupant's body.

Name of Potential Recipient: Hart Metals Inc.
Location: Tamaqua, PA
Amount: $3,250,000
Project Name: Lightweight Magnesium Parts for Military

Purpose/Project Description: The program's objective is to develop high-performance magnesium alloy and composite powders and magnesium casting alloys for the manufacture of lightweight components for the Army. Such new materials would replace the much heavier components currently utilized in military vehicles and provide improved strength, weight savings and improved fuel efficiency. If awarded, funding will be used to design and construct a small atomizer to produce experimental magnesium alloy powders to evaluate properties & performance of the components.

Name of Potential Recipient: Impact Technologies
Location: State College, PA
Amount: $4,000,000
Project Name: Smart Oil Sensor

Purpose/Project Description: The Smart Oil Sensor is an engine lubricant quality sensor for application to Army ground vehicles, wheeled and tracked, all of which have a requirement for an oil condition sensor. These advanced fluid analysis techniques enable the determination of lubricant remaining useful life as well as the identification and quantification of many of the primary internal combustion engine lubricant failure modes. Smart Oil Sensors also eliminates the need to change oil based on inherently conservative, and in some cases, arbitrary mileage estimates, and allows 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. If awarded, funding will be used for development of condition based maintenance technologies.

Name of Potential Recipient: INRange Systems, Inc.
Location: Altoona, PA
Amount: $2,000,000
Project Name: Telepharmacy Robotic Medicine Device Unit (TRMDU)

Purpose/Project Description: The Telepharmacy Robotic Medicine Device Unit (TRMDU) project will serve 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. Its primary goals are to evaluate the impact of TRMDU on drug related problems, on patient well being and health status, and on cost of care. Funding is needed to securely integrate TRMDU into the military's patient electronic health record system (EHR), AHLTA, and the VA's Veterans Health Information Systems and Technology Architecture (VistA).

Name of Potential Recipient: JLG Industries
Location: McConnellsnurg, PA
Amount: $3,400,000
Project Name: Engine Installation Removal Vehicle (EIRV) Program

Purpose/Project Description: If awarded, funding will be used to procure 25 additional Engine Installation Removal Vehicle's (EIRV). The purpose of the EIRV program is to satisfy the operational need of the U.S. Navy and Marine Corps by providing a commercial off the shelf (COTS) mobile Engine/Propeller Installation and Removal System, with the capability of safely installing and removing the T56 engine and/or T56 propeller on and from P-3, C-2, E-2 and C-130 aircraft. The Navy is currently removing and replacing aircraft engines with an unsafe combination of manual tri-pod hoists, scaffolding, and industrial forklifts. The ERIV should reduce damage to equipment, injuries to worker and increase efficiencies.

Name of Potential Recipient: KCF Technologies, Inc.
Location: State College, PA
Amount: $3,000,000
Project Name: Self-Powered Prosthetic Limb Technology

Purpose/Project Description: If awarded, funding will be used for the development and deployment of the Self-Powered Prosthetic Limb Technology, which builds upon a Phase I STTR project. The objective of this project is to further develop an energy harvesting device as a component in a lower extremity prosthetic limb. The device will be integrated into the lower pylon (shin) of the prosthetic leg where the captured energy is regulated and stored to automatically recharge the batteries of the leg.

Name of Potential Recipient: L-3 Communications, Electron Devices
Location: Williamsport, PA
Amount: $2,000,000
Project Name: High Power Microwave Source Development

Purpose/Project Description: One manner to defeat \ Improvised Explosive Devices (IEDs) poses is to transmit High Power Microwave (HPM) energy in the vicinity of the suspected threat thereby disabling remote detonation or in some cases cause pre-detonation. If awarded, funding will be used to develop two key elements: an instant-on High Power Microwave (HPM) source and a HPM device with variable frequency output. This will allow the IED defeat system to instantaneously defend against multiple threats which may be detonated by simple transmitters operating at different frequencies.

Name of Potential Recipient: Lehigh Heavy Forge Corporation
Location: Bethlehem, PA
Amount: $5,500,000
Project Name: Navy Production Capacity Improvement Project

Purpose/Project Description: If awarded, funding will be used to increase Lehigh Heavy Forge Corporation's (LHFC) capacity, which is the only domestic producer of the large complex forging required for the Nuclear Powered Navy. The Navy depends on LHFC for 100% of the ship shafts used by its surface and sub-surface combat vessels, and without the extra capacity, LHFC cannot meet the Navy's needs. The project would help expand, modernize, and maintain the production capabilities of Lehigh Heavy Forge.

Name of Potential Recipient: Lehigh University
Location: Bethlehem, PA
Amount: $3,000,000
Project Name: Photonic Integration Foundry

Purpose/Project Description: Photonic integrated circuits (PICs), or optical "systems on a chip", replace bulky discrete optical packaging and individual precision optical alignments with simple, low-loss lithographic on-chip guided-wave connectivity monolithically forged in single crystal wafers. Given that on previous major aviation platforms such as the F-14 and F-15 the cost of the avionics packages was more than 80% of the cost of the entire aircraft, avionics is the one area where technological advances such as PICs can actually help reduce overall costs. If awarded, funding will be used to deliver enabling photonic integrated circuit technologies required for next generation Navy avionics and to address the need for dramatic reductions in size, weight and power usage of current avionics systems.

Name of Potential Recipient: Lockheed Martin
Location: Archibald, PA
Amount: $2,000,000
Project Name: Enhanced Laser Guided Training Round (E-LGTR)

Purpose/Project Description: The Laser Guided Training round has been in continuous production since 1991 and is currently in use by the U.S. Navy and U.S. Marine Corps. It provides live-fire training for aircrew employment of laser guided weapons at a fraction of the cost of the combat inventoried assets. If awarded, funding will be used to develop and produce an Operation Utility Evaluation of the Enhanced Laser Guided Training Round allowing the U.S. Air Force to perform a flight evaluation to assess the operational utility for training needs.

Name of Potential Recipient: LORD Corporation
Location: Erie, PA
Amount: $3,000,000
Project Name: Omni-Directional Active Vibration Control System (OMNI-AVCS)

Purpose/Project Description: LORD's Active Vibration Control Systems are being used to minimize vibration and reduce weight (up to 120 lbs) in helicopters. Advanced active controls, aerodynamics, handling qualities, and smart material technologies provide rotors and flight controls capable of increased payload, range, agility, maneuverability, and survivability. If awarded, funding will be used to advance the test and evaluation of LORD's Omni Active Vibration Control System integration on the CH-47 Chinook aircraft.

Name of Potential Recipient: MaxPower, Inc.
Location: Harleysville, PA
Amount: $4,000,000
Project Name: Ceramic Membrane – 10(X) Times More Energy for Battery Systems

Purpose/Project Description: If awarded, funding will be used to develop a ceramic membrane for a lithium air battery system that has superior high energy density [10(x) times more], resulting in a battery technology that provides the soldier with a high power, high energy battery that is reliable and is safe in high temperature desert environments. The US Army has been trying to develop technologies that can lighten the load of the warfighter. A reduction in the number of batteries would lighten the overall dead weight load.

Name of Potential Recipient: Medico Industries, Inc.
Location: Wilkes-Barre, PA
Amount: $3,100,000
Project Name: Medium Caliber Metal Ports Upgrade

Purpose/Project Description: The objective of this project is to assess production base capabilities and needs over the acquisition life cycle of various munitions and will address the producibility of ammunition including transition to type classification and production, and the ability of the production base to cost effectively produce quality products on schedule. If awarded, funding will be used to verify the metal parts process by conducting a limited production run with processing knowledge captured by the IDE superstructure.

Name of Potential Recipient: Mine Safety Appliances Company
Location: Cranberry Township, PA
Amount: $3,000,000
Project Name: Advanced Head Protection Material Development and Manufacturing to Reduce Traumatic Brain Injury

Purpose/Project Description: In 2008, the RAND Corporation estimated that about 20 percent, or 320,000 of U.S. service members returning from Afghanistan and Iraq suffered some type of traumatic brain injury during their deployment. If awarded, funding will be used to develop advanced impact head and neck protection helmets.

Name of Potential Recipient: Morgan Advanced Materials and Technology
Location: St. Marys, PA
Amount: $2,200,000
Project Name: Advanced Light-Weight Ceramic Amor Initiative

Purpose/Project Description: A requirement for new ground vehicles is the use of lightweight, blast/ballistic resistant advanced armor materials that can be integrated into the design and operation of the vehicle. Morgan AM&T has a unique and proprietary material that offers the potential of rapid implementation of new system materials and designs leading to an efficient shift in needed capacity from body armor to vehicle armor. If awarded, funding will provide for the accelerated development of materials processing and fabrication methods of Silicon Carbide ceramic for vehicle armor applications; development of lower cost approaches of manufacturing, and for the development of design approaches that take full advantage of the benefits of the ceramic in vehicle armor systems.

Name of Potential Recipient: NanoBlox, Inc.
Location: Clarion, PA
Amount: $4,000,000
Project Name: Domestic Production of Nanodiamond for Military Applications

Purpose/Project Description: NanoBlox has developed innovative technologies to optimize and functionalize nanodiamond material(s) and its derivatives for a wide variety of military applications. NanoBlox's nanodiamond enables dramatic physical and chemical improvements to many materials. Nanodiamond material is produced by the controlled detonation of a high energetic material (TNT/Composition B). If awarded, funding will be used to develop and build a production-scale nanodiamond production operation.

Name of Potential Recipient: The National Center for Defense Manufacturing and Machining (NCDMM)
Location: Latrobe, PA
Amount: $5,000,000
Project Name: The National Center for Defense Manufacturing and Machining

Purpose/Project Description: The NCDMM was established in 2003 to address the Pentagon's need for manufacturing expertise to reduce overall defense program costs (initial development and sustainability costs). The NCDMM identifies specific defense manufacturing operations for improvement and implements more modern technology resulting in reduced costs, shorter lead times and/or enhanced quality of manufactured components. They mostly work with Western Pennsylvanian companies. If awarded, NCDMM will use the funding toward operations and management costs and for its annual project call.

Name of Potential Recipient: Night Vision Systems
Location: Allentown, PA
Amount: $5,000,000
Project Name: K-90, Night Vision Component Technology

Purpose/Project Description: Currently, soldiers utilize a direct view optic for enhanced small arms target acquisition during daylight hours. During night operations and to defeat obscurant, soldiers remove their direct view optic in order to attach highly effective thermal weapon sights and then zero them to the weapon. The K-90, Night vision Component Technology gives the soldier the ability to detect threats in defilade, urban clutter, and dirty battlefield conditions (smoke, fog, dust) during day/night operations. If awarded, funding will be used to develop a family of 17 micron clip-on thermal weapon sights that will allow soldiers to retain their direct view optic without need for removing the device from the weapon and mounting the clip-on thermal weapon sight forward of their direct view optic.

Name of Potential Recipient: Nokomis, Inc.
Location: Charleroi, PA
Amount: $2,000,000
Project Name: RAPID Development for IED/WMD Detection

Purpose/Project Description: This project will leverage Nokomis' existing Improvised Explosive Device (IED) detection/identification capability to develop a man-portable dismounted detection system capable of detecting and identifying electromagnetic signatures emanating from IED trigger devices such as two-way radios and cellular phones. If awarded, funding will be used to develop new hardware products that when coupled with existing Advanced Electromagnetic Location of Electronic Devices (AELED) capability will provide IED detection for force protection.

Name of Potential Recipient: Pennsylvania National Guard
Location: Fort Indiantown Gap, PA
Amount: $5,000,000
Project Name: Northeast Counterdrug Training Center

Purpose/Project Description: The Northeast Counterdrug Training Center (NCTC) provides DOD personnel, military units, local, state and federal law enforcement agencies, and community anti-drug coalitions with a no-cost training center. NCTC provide the facilities, instruction and support to enhance the capabilities to reduce and remove illegal drugs, and educate communities in the most up-to-date prevention techniques. If awarded, funding would meet NCTC's projected costs for the upcoming year.

Name of Potential Recipient: Pennsylvania State University
Location: University Park, PA
Amount: $4,000,000
Project Name: Hybrid Power System for Large Unmanned Undersea Vehicles (UUV)

Purpose/Project Description: If awarded funding, this project will develop a hybrid power system consisting of reactant storage, low and high power conversion and power transmission, and aluminum/seawater combustion, which will provide significantly higher power densities for unmanned undersea vehicles (UUV). This increase in power density will enable large UUVs to operate at ranges and speeds that will allow full coverage of the world's oceans for exploration, data collection, and national security purposes.

Name of Potential Recipient: Piasecki Aircraft Corporation
Location: Essington, PA
Amount: $8,200,000
Project Name: Vectored Thrust Ducted Propeller (VTDP) Compound Helicopter Flight Demonstration

Purpose/Project Description: If awarded funding, Piasecki Aircraft of Delaware County will continue the development and testing of the Vectored Thrust Ducted Propeller helicopter technology which has the potential to increase the craft's speed, range and survivability.

Name of Potential Recipient: Pittsburgh Tissue Engineering Initiative
Location: Pittsburgh, PA
Amount: $5,000,000
Project Name: Advanced Regenerative Medicine Therapies for Combat Injuries

Purpose/Project Description: Today, hand and facial tissue transplantation is a clinical reality with over 45 hand and 4 facial transplants performed to date with extremely encouraging functional outcomes. If awarded funding, this project will focus on implementation of cell-based immunomodulatory strategies to improve the safety, efficacy and applicability of these promising reconstruction modalities. To date, over 12,500 troops have been wounded in combat in Operation Iraqi Freedom in Iraq (OIF) and Operation Enduring Freedom in Afghanistan (OEF), with over 40% of injuries involving musculoskeletal tissues (skin, soft tissue and bone) of extremities.

Name of Potential Recipient: Power and Energy, Inc.
Location: Ivyland, PA
Amount: $4,000,000
Project Name: Pure Hydrogen Supply form Logistic Fuels

Purpose/Project Description: Power and Energy is working to extract pure hydrogen from contaminated logistic fuels and supply to fuel cells for power generation. This will enable the Navy to have distributed shipboard power and reduce vulnerability to attack. Analogous hydrogen programs are in place for the Army, Marines and Air Force. If awarded, funding will be used to analyze, design and create a scaled up fuel processor that the Navy then can use and test.

Name of Potential Recipient: PPG Industries
Location: Allison Park, PA
Amount: $3,000,000
Project Name: Force Protection Material and Temperature Resistant Landing Pads

Purpose/Project Description: Current coatings systems for battle carriers and military runways were not designed to withstand the high temperatures generated by the exhaust gases of modern vertical take-off and landing (VTOL) aircraft such as the F-35 or V-22. PPG Industries is working to develop a new class of cost effective Inorganic Composite Binder (ICB) for high temperature resistant non-skid coatings. If awarded funding, this program would seek to optimize this material for use in a variety of applications including VTOL aircraft landing areas.

Name of Potential Recipient: ProModel Corporation
Location: Allentown, PA
Amount: $5,000,000
Project Name: Army Force Generation Synchronization Tool

Purpose/Project Description: If awarded, funding will be used to expand the current use of the Army Force Generation Synchronization Tool (AST) by accelerating the deployment and enhancing the current capabilities of the ProModel AST software. This software enables the Army to capture the ARFORGEN process in software, providing decision makers the ability to rapidly create Courses of Action (COA's) and predict the impact of their decisions on key metrics such as "Dwell" and "Boots on Ground".

Name of Potential Recipient: Rajant Corporation
Location: Malvern, PA
Amount: $5,900,000
Project Name: Portable Mobile Emergency Broadband Systems (PMEBS)

Purpose/Project Description: The Portable Mobile Emergency Broadband System consists of mobile communication devices that wirelessly link together to form a digital broadband network. The PMEBS networks enable untrained personnel to rapidly establish, replace or augment communication systems with a secure, rugged, battery-powered, auto-configuring, high bandwidth, fully mobile network. If awarded, funding will be used for research and development to expand the high bandwidth to support mobile situational awareness and operational efficiency, implementation of Suite B security, and low frequency band for range and non-line-of-sight improvement.

Name of Potential Recipient: Saint Francis University's Center of Excellence for Remote and Medically Served Areas
Location: Loretto, PA
Amount: $7,500,000
Project Name: Rural Health – Center of Excellence for Remote and Medically Served Areas (CERMUSA)

Purpose/Project Description: CERMUSA's research efforts have brought distinct benefits to both military and civilian communities. Tangible deliverables include: development and deployment of a patented Radio Frequency to Internet Protocol (RF to IP) Bridge System to support military and

civilian first responders, improvement of remote wound care for home healthcare services and potential use for returning wounded veterans to name a few. If awarded, CERMUSA would use the funding to develop cellular multimedia content distribution, testing and evaluation of bandwidth-efficient content distribution, refine deployable tactical and communications networks for rural military and first responders units.

Name of Potential Recipient: SCHOTT Diamond View Armor Products, LLC
Location: Boothwyn, PA
Amount: $6,000,000
Project Name: Advanced Transparent LAS Glass Ceramic Armor Systems for Force Protection Physical Security Infrastructure Applications

Purpose/Project Description: If awarded, SCHOTT Diamond View Armor Products seeks to improve current glass systems used by the military to enhance glass found on various vehicles. Funding would be used to develop and evaluate light weight, production capable, reasonable cost transparent armor systems for physical security protection against blasts, fragments, and small arms weapon attack using novel glass-ceramic compositions and new transparent polymers reinforced with strengthening fibers, combined and incorporating mechanisms for sensing and shielding.

Name of Potential Recipient: SCHOTT North America, Inc.
Location: Duryea, PA
Amount: $6,000,000
Project Name: High Homogeneity Optical Glass

Purpose/Project Description: The production of high-homogeneity glasses is very difficult and as optical devices become more sophisticated, demand for higher precision optical materials also increases. The most widely desired optical materials have extraordinarily high levels of homogeneity. The project will include low and high viscosity optical glasses with importance to science, national defense and security applications. If awarded, funding will be used to analyze and develop a robust small lot size melting process for mineral glasses that have desired optical properties with an acceptable cost structure.

Name of Potential Recipient: Sechan Electronics, Inc.
Location: Lititz, PA
Amount: $3,200,000
Project Name: Electronic Keel

Purpose/Project Description: Constantly shifting requirements, created by emerging threats, have resulted in unacceptable delays and system performance failures in an attempt to field new technologies on current and future armored vehicle programs. The Electronic Keel is a data distribution system that accepts any vehicle's remote weapon, sensor and communication sub-

system within one distributed network. It contains super computing power with fully self-forming and healing network connectivity. If awarded, funding will be used for manufacturing operational experimentation and deployment of the EKeel system for current and future armored vehicles

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Name of Potential Recipient: SPD Electrical Systems
Location: Philadelphia, PA
Amount: $5,000,000
Project Name: High Speed Power Node Switching and Power Node Control Centers

Purpose/Project Description: The advent of high-energy weapons, increasingly powerful radars, and increased sophistication of combat equipment requires that the supporting electrical power system supply quality power to these vital combat system loads. The project, when completed, will provide the Navy with continuously available quality power to safely and efficiently operate its high-energy weapons, radars and combat equipment while reducing fuel costs and the overall cost of the electrical system.

Name of Potential Recipient: Stemnion, Inc.
Location: Pittsburgh, PA
Amount: $4,500,000
Project Name: Rapid Wound Healing Cell Technology

Purpose/Project Description: If awarded, funding will be used for research and development of a non-embryonic cell based technology platform for wound healing therapies to treat combat related injuries of troops. This technology platform will use proprietary cell-based therapies to repair injuries related to burn and blast incidents. This project's cells provide an exciting new approach and paradigm shift to promote rapid wound healing and tissue repair in a wide range of injuries with decreased scarring.

Name of Potential Recipient: Temple University
Location: Philadelphia, PA
Amount: $5,000,000
Project Name: Sustainable Solutions to Emerging Contaminants at Defense Facilities

Purpose/Project Description: If awarded, funding will be used for research on emerging contaminants at defense facilities. Emerging Contaminants (ECs) are chemicals and materials with perceived or real threat to human health or the environment, which may have been recently detected and have no health standards. A recent study by the US Geological Survey reported that 80% of tested streams were contaminated with ECs. ECs can have the following impacts on DOD: (1) adverse health effects; (2) reduced training readiness from restrictions on use of facilities; (3) restricted or non-availability of materials resulting in adverse impact on mission-critical applications; and (4) dramatically increased O&M and cleanup costs.

Name of Potential Recipient: TRS Technologies, Inc.
Location: State College, PA
Amount: $3,550,000
Project Name: Ferroelectric Component Technology

Purpose/Project Description: Many advances such as improved body and vehicle armor have been made to protect soldiers against Improvised Explosive Devices (IEDs) and suicide attacks, but relatively little progress has been made in disrupting these tactics so that detonations and collisions are controlled or prevented altogether. Single-use electromagnetic pulse (EMP) technology has shown promise in remotely and non-lethally disrupting or destroying electronics and defeating IEDs. If awarded, funding will be used on research aimed at scaling up fabrication processes for Ferroelectric Components to achieve production levels needed for IED defeat munitions.

Name of Potential Recipient: University of Pittsburgh Canter for Vaccine Research
Location: Pittsburgh, PA
Amount: $2,500,000
Project Name: University of Pittsburgh Center for Vaccine Research/Regional Biocontainment Laboratory

Purpose/Project Description: The University of Pittsburgh Center for Vaccine Research performs basic to applied research on viral and bacterial agents that cause diseases and can sometimes be weaponized for bioterrorist attacks. If awarded, funding for the Center for Vaccine Research will be used for completing and expanding the required personnel, equipment, and supplies necessary to conduct this research. The specific benefit to warfighters is the prevention and treatment of the diseases they may be exposed to as they serve all over the world, but particularly in combat operations in the Middle East.

Name of Potential Recipient: Unisys
Location: Malvern, PA
Amount: $3,200,000
Project Name: Cyber Security Using Bit-Splitting Cryptography for USSOCOM TACLAN

Purpose/Project Description: If awarded, funding will be used for the development of Department of Defense information security technology. This program will develop a prototype for testing and development using encrypted bit-splitting technology that will significantly downsize a Tactical Local Area Network (TACLAN) suite and provide increased protection of data against cyber-attack.

Name of Potential Recipient: V Systems Composites, Inc.
Location: Chester, PA
Amount: $5,700,000
Project Name: Drive System Composite Structural Component Risk Reduction Program

Purpose/Project Description: V System Composites will demonstrate production readiness of Polymer Matrix Composite critical rotorcraft drive system components through an accelerated full-scale design and test program that reduces the risk for technology transition to Department of Defense platforms. If awarded, funding will be used for 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, lower acquisition operation and support (O&S), and lifecycle costs.

Name of Potential Recipient: Villanova University
Location: Villanova, PA
Amount: $4,500,000
Project Name: Intelligent Remote Sensing for Urban Warfare Operations II National Applied Software Engineering Center (NASEC)

Purpose/Project Description: Villanova University seeks to reduce decision time by conveying critical situation analyses and decision support to the commanders in those situations and to their superiors in urban settings. They will combine new technologies for (1) airborne collection of urban situation data with (2) the ability to visualize that urban data and rapidly plan a response. If awarded, funding will be used for the development of radio frequency (RF) technology for sensor, real-time analysis and visualization of evolving situations, airborne radar imaging for detection of targets inside buildings, smart transceivers for secure and efficient information-sharing and fast semi-conductor switches for increased robustness against interference or jamming.