

## **Requests submitted to the Subcommittee on Defense on May 15, 2009**

The following projects were requested by organizations with operations in New Jersey that are leading research, advancing technology and improving efficiencies of the United States Military.

**Intended Recipient and Location:** Absecon Mills, Incorporated  
Cologee, NJ

**Project Name:** Non Traditional Weaving Applications for Aramid (Ballistic) fibers and fabrics

**Project Purpose:** This project will develop and test non-industry design and manufacturing techniques for force protection technology through non-traditional weave designs of Aramid (Ballistic) fiber, coupled with new applications of microwave plasma treatments.

The research directly supports and compliments the Science and Technology Research of the United States Navy, Office of Naval Research both for force protection initiatives and Composite Materials Research. Through non-traditional weave designs of Aramid (Ballistic) fiber coupled with new applications of microwave plasma treatments can enhance the strength of the fiber and result in enhanced individual mobility, ease of medical access, reduced weight, increased ballistic protection, cost effective savings and weight reduction of ballistic materials currently used.

**Amount Requested:** \$3,586,675

**Intended Recipient and Location:** Advanced Cerametrics  
Lambertville, NJ

**Project Name:** Self-Powered Sensor System for Munition Guidance and Health Monitoring of Weapon Systems

**Project Purpose:** Advanced Cerametrics Inc. of Lambertville, New Jersey in collaboration with ARDEC, Picatinny Arsenal has developed a sensor system that does not require outside sources of power. ACI's piezoelectric fiber composite transducers harvest mechanical energy and convert it into electrical energy. All military services are turning to condition-based maintenance to sharply reduce the cost of maintenance and to increase the useful life of weapons systems. These systems are often costly and fail with only batteries available for power. Piezoelectric fibers can eliminate the need for batteries. By harnessing energy through fiber transducers, this project will reduce cost and build more viable, reliable condition based maintenance systems.

**Amount Requested:** \$2,800,000

**Intended Recipient and Location:** Alliant Techsystems  
Arlington, VA

**Project Name:** Mortar Anti-Personnel/Anti-Materiel (MAPAM)

**Project Purpose:** The Army has a continuing need for improved munitions. Picatinny Arsenal is the Army's leading research, development and testing facility for future armament and munitions systems. Alliant Techsystems in conjunction with Picatinny Arsenal will continue researching and testing MAPAM. The MAPAM on average is 98 percent more lethal in proximity mode than the current 60mm mortar ammunition. This will increase combat capability

and reduce ammunition load. The Army wants to evaluate the new 81mm mortar and use the approved round technology of the 60MM MAPAM for the 81mm round, use the fragmentation technology of the 60MM MAPAM in the 81mm caliber, increase the lethality for the 81mm caliber mortar, and to all operating parameters to the greatest extent possible.

**Amount Requested:** \$4,000,000

**Intended Recipient and Location:** American Nanomyte / NEI Corporation  
Somerset, NJ

**Project Name:** Nanotechnology-Enabled Self-Healing Anti-Corrosion Coating Products for Protection of Weapon Systems

**Project Purpose:** The objective of this project is to produce a novel class of self-healing pretreatment and polymer coatings containing corrosion inhibiting nanoscale particles. Currently available chrome-free pretreatments do not have the ability to "self-heal," i.e., repair themselves if damaged, and hence exhibit inferior corrosion protection, especially for light metals and their alloys, such as magnesium and aluminum. Furthermore, adhesion of organic coatings on metals such as magnesium and titanium is especially poor. This creates issues with respect to "paintability" of these high strength and light weight metals.

**Amount Requested:** \$2,000,000

**Intended Recipient and Location:** American Systems  
Denville, NJ

**Project Name:** Force Protection Layered Defense

**Project Purpose:** Funding would lead to the development of a Force Protection Layered Defense that uses state of the art technology to provide measured, threat triggered mitigation actions to identify, neutralize and/or defeat threats to forward deployed and homeland defense high value targets. The Force Protection Layered Defense concept is one such system's approach that uses technology to trade space for time while allowing decision makers to take appropriate actions to mitigate or defeat the threat. The foundation of the approach is a series of complimentary, networked and integrated technologically advanced sensors that "filter" a threat and allow appropriate measures to be taken against those threats that are not positively identified as friendly.

**Amount Requested:** \$5,000,000

**Intended Recipient and Location:** Atlantic Technical Components, Inc  
Roselle Park, NJ

**Project Name:** Manufacture of Tantalum Alloys for Advanced Army Warheads

**Project Purpose:** The Army is specifically interested in demonstrating the capabilities of solid free-form fabrication methods (SFF), a green manufacturing technique, to produce tantalum alloys that meet warheads-grade material performance specs. Atlantic Technical Components will design, test and produce a very dense tantalum alloy material using solid free-form fabrication (SFF) that will meet Army's technical performance specifications for advanced warheads.

**Amount Requested:** \$6,200,000

**Intended Recipient and Location:** BAE Systems

Totowa, NJ

**Project Name:** C-130J AN/ALR-56M RWR Digital Upgrade

**Project Purpose:** BAE Systems will develop the integration and testing of a digital upgrade to the AN/ALR-56M radar warning receiver (RWR) for the C-130J. This upgrade, through the use of F-35 and other advanced digital EW technology, will provide USAF aircrew the combat capabilities they need not only to survive but to excel in the 21st Century battlespace. It will lower the total cost of system ownership by eliminating three LRUs while significantly improving the AN/ALR-56M's reliability.

**Amount Requested:** \$6,000,000

**Intended Recipient and Location:** BAE Systems  
Wayne, NJ

**Project Name:** Smart Application Framework for Battle Command

**Project Purpose:** The U.S. Army Research and Development Engineering Command's (RDECOM) Communications-Electronics Research Development Engineering Center (CERDEC) Command & Control Directorate (C2D) at Ft. Monmouth, NJ has an identified requirement to develop and field a network-centric application framework in which "smart" applications combine battle command and situational awareness (BC/SA) web-based services for appropriate battlefield functional areas (BFAs). BAE Systems will develop a smart application framework for battle command that will facilitate flexible network-centric C2 software. The resulting smart BC/SA applications will provide increased collaboration and faster decision-making for the Warfighter and will be adaptive to emerging information requirements across operational phases. It will reduce overall software development time and investment and will provide improved knowledge transfer between rotating operational units.

**Amount Requested:** \$5,000,000

**Intended Recipient and Location:** Bayonne Local Redevelopment Authority  
Bayonne, NJ

**Project Name:** Phase I of Berth N-2 Reconstruction-MOTBY

**Project Purpose:** The Bayonne Local Redevelopment Authority will reconstruct/stabilize 1,380 lf of decaying bulkhead and eroding shoreline of the N-2 berth area of former MOTBY in the first phase of Berth N-2 reconstruction. When completed, the Berth N-2 reconstruction project will double functional berthing capacity on the Bayonne side of the Port Jersey Channel for commercial vessels, or military/federal vessels in event of national emergency.

**Amount Requested:** \$7,103,000

**Intended Recipient and Location:** Crystal Genesis  
Sparta, NJ

**Project Name:** Mid-IR Laser Materials

**Project Purpose:** Crystal Genesis will develop composite crystalline materials to enable the construction of next generation high-power short pulse mid-infrared (MIR) lasers. Funding will be used to construct three custom crystal growth stations and develop a commercially viable crystal growth process, fabrication techniques, and optical coating process that provides enabling laser gain components for next generation laser technology. National security and future high-tech jobs require next generation systems developers have access to advanced enabling materials.

**Amount Requested:** \$1,100,000

**Intended Recipient and Location:** Curtiss Wright Engineered Pump Division (EPD)  
Phillipsburg, NJ

**Project Name:** Landing Craft Composite Lift Fan

**Project Purpose:** Curtiss Wright Engineered Pump Division will install, demonstrate and test the composite lift fan prototype funded and manufactured in FY09 on a Navy landing craft (LCAC) and incorporate lessons learned into a final composite lift fan design. The LCAC amphibious vessels operate in extremely demanding environments. The presence of salt water, extreme temperatures and the abrasive effects of airborne sand reduce the effective life of the existing metal fans to unacceptable duration. The proposed effort will combine the best available technology and a proven domestic manufacturer to provide a fan that reduces failures, improves life cycle cost and meets the Navy's requirements for the next generation landing craft.

**Amount Requested:** \$1,500,000

**Intended Recipient and Location:** Drakontas LLC  
Camden, NJ

**Project Name:** Building a Unified Information Framework

**Project Purpose:** The U.S. Army ARDEC at Picatinny, New Jersey is leading an effort combining and harmonizing a number of Homeland Defense and Homeland Security programs involving government, academia and industry with a project entitled Project National Shield (PNS). The intent of PNS is to establish the mission value of a network of virtual communication and collaboration capabilities fielded by the Department of Defense (DOD) that will provide technologies to support Small Unit Operations (SUO) as part of the DOD Civil Support mission. Drakontas will develop a shared interoperable data framework and unified messaging platform to facilitate rapid sharing of command and control information among military and civilian emergency response teams.

**Amount Requested:** \$3,500,000

**Intended Recipient and Location:** Drexel University  
Philadelphia, PA

**Project Name:** Applied Communication and Information Networking (ACIN) Program

**Project Purpose:** Located in Camden, NJ, the ACIN Camden Center matches DOD needs with academic and industrial capabilities in communications and information networking. In FY 2010 ACIN will focus on solutions that are of major importance to DOD's strategic system needs such as compression algorithms for tactical UAV airborne cameras and tactical service provider - collaboration with the Defense Information Systems Agency, Joint Concept Technology Demonstration, 2007-2009 on Evaluation of WiMAX technologies for on the pause dismount communications. ACIN enables DOD warfighters to rapidly deploy state-of-the-practice communications and networking technology for warfighting and National Security. The core

objective of ACIN is R&D and commercialization of technologies that will revolutionize military capabilities, including doctrine and methods of operation.

**Amount Requested:** \$7,000,000

**Intended Recipient and Location:** Dynamic Animation Systems, Inc  
Fairfax, VA

**Project Name:** Procurement of Virtual Interactive Combat Environment Training Systems for the New Jersey National Guard

**Project Purpose:** The New Jersey National Guard (NJNG) has benefited greatly from the V.I.C.E. training system(s) they have been using for the past two years. Using their current V.I.C.E. system(s) the NJNG Joint Training and Training Development Center (JT2DC) at Fort Dix has developed a training regimen which would benefit all National Guardsmen and Reserves deploying to Iraq or Afghanistan. The additional fixed and mobile systems are required to enable simultaneous fire team, squad and platoon training and the increased capacity will allow all units to receive the training.

**Amount Requested:** \$7,100,000

**Intended Recipient and Location:** Elusys Therapeutics, Inc.  
Pine Brook, NJ

**Project Name:** Field-Ready, Intramuscular Anthrax Therapeutic for Protection of Military Personnel

**Project Purpose:** Elusys Therapeutics, Inc. will develop a high temperature-stable, intramuscular formulation of Anthim, an anthrax anti-toxin for DoD use that can be stored and deployed rapidly at military installations across the globe to protect warfighters and military support personnel following exposure to anthrax in a biowarfare attack.

**Amount Requested:** \$1,672,000

**Intended Recipient and Location:** Englewood Hospital and Medical Center  
Englewood, NJ

**Project Name:** The Institute for the Advancement of Bloodless Medicine

**Project Purpose:** The Institute for the Advancement of Bloodless Medicine will assist military, civilian physicians and other healthcare providers willing to implement improved blood management strategies in their practice. The participants of the model project are not only taught procedures in blood management, but also to teach, collect data, use available resources and to manage and lead their blood management efforts. After a 5-year period, a series of Department of Defense medical providers will be proficient in blood management and will be able to take a leadership role in developing a blood management program throughout the military and within military and civilian hospitals. Through this initiative, patient-centered care in blood management will be available.

**Amount Requested:** \$1,866,000

**Intended Recipient and Location:** Fairleigh Dickinson University  
Teaneck, NJ

**Project Name:** National Guard Global Education Project

**Project Purpose:** Fairleigh Dickinson University will provide National Guardmembers with access to high quality online coursework in a flexible curriculum appropriate for individuals who hold down full-time jobs but also may be required to deploy on short notice for long periods of time. Funding is used to develop additional online courses and ultimately an online Bachelor 's Degree because National Guardmembers have a pressing need for college level education courses in the NJ National Guard and nationwide. Among the nearly 6,000 people currently serving in the New Jersey Army National Guard, 2% have earned Bachelor 's degrees, 3% have earned Associate 's Degrees, and 60% have earned high school diplomas. The program also represents an important retention tool for the Guard.

**Amount Requested:** \$750,000

**Intended Recipient and Location:** Filtration Solutions, Inc.  
Hackettstown, NJ

**Project Name:** Advanced Fuel Filtration (AFF) System

**Project Purpose:** The Advanced Fuel Filtration system is one-third the cost of the legacy centrifugal purifier. This equipment will save \$25 million per year for the Navy from maintenance and operation cost after it is fully implemented to the DDG-51 and CG-47 class ships. The goal is to complete a retrofit of the developed fuel filtration unit for the replacement of the current shipboard centrifugal purifier onboard a Navy ship by three specific tasks: develop a militarized fuel filtration unit to pass the required certification, develop a ship alteration package for the DDG class of ships and complete the installation onboard the selected ship.

**Amount Requested:** \$3,200,000

**Intended Recipient and Location:** Frontier Performance Polymers Corp  
Dover, NJ

**Project Name:** Lightweight Packaging System for Enhancing Combat Munitions Logistics

**Project Purpose:** Frontier Performance Polymers will develop an advanced multifunctional lightweight materials, cost-effective fabrication processes and optimized packaging systems for 120MM mortar ammunition. Research has already resulted in a reduction of 30% in system weight and 20% in system cost. There has also been success with increased shipping capacity, greater portability by one soldier, ease of access to ammunition and reduced loading, assembling and packing costs. Acceleration of this program for the production of the lightweight munitions packaging systems will ultimately enhance force readiness, reduce the logistics footprint, increase handling and supply efficiency, enhance safety and improve a soldier 's mobility, agility and survivability, especially at the time of additional U.S. troop deployments to Afghanistan. This technology could also be used for producing lower cost composite armors or ballistic barriers to protect our warfighters.

**Amount Requested:** \$3,500,000

**Intended Recipient and Location:** Garden State Cancer Center  
Belleville, NJ

**Project Name:** Vaccine Development Program

**Project Purpose:** GSCC's Vaccine Development Program supports development of countermeasures to protect the Nation from bioterrorism agents. These agents pose a risk to national security because they are easily transmitted from person to person resulting in high

mortality rates and it has the potential for a major public impact. Currently, GSCC's Program is focused on the development of a safe vaccine against the smallpox virus, a Category A pathogen, which is one of nine agents of highest priority for biodefense research. As part of this development, GSCC's Program recognizes the use of vaccine platforms as a more flexible, effective approach to develop vaccines against multiple bioterrorism agents.

**Amount Requested:** \$4,220,000

**Intended Recipient and Location:** Goodrich ISR Systems Princeton  
Princeton, NJ

**Project Name:** Hostile Fire Indicator for Aircraft

**Project Purpose:** US Army rotary-winged aircraft are increasingly susceptible to small arms and RPG fire in their current and potential future asymmetrical operating environments. To combat this threat, aircrews need a reliable means to quickly identify hostile fire in order to apply countermeasures or take evasive action. Integrating an Indium Gallium Arsenide (InGaAs) Short Wave Infrared (SWIR) detector into the AN/AVR-2B (V) Laser Detecting Set would enhance the sensor to detect small arms and RPG fires. FY10 funding for this project will support modifications to the SWIR camera to optimize the camera for hostile fire detection.

**Amount Requested:** \$5,000,000

**Intended Recipient and Location:** Hackensack University Medical Center Foundation  
Hackensack, NJ

**Project Name:** Advanced Development of Mobile Rapid Response Prototypes

**Project Purpose:** The MRRP program has been developed for Defense Threat Reduction Agency's Research & Development Enterprise with three tracks designed to serve chemical & biological medical defense needs of the northeast population of the United States and to enhance medical technology for DOD. Track 1 is developing a rapidly deployable medical surge capacity for response to terrorist incidents, natural & accidental disasters in the northeastern US – designed to be replicated & shared with other jurisdictions with safeguarding missions & within DOD. Track 2 involves working with other DOD medical assets to enhance emergency medical technology for DOD identified needs by advancing promising medical/surgical technology & treatments for war fighters in forward deployed hostile zones. Track 3 is developing procedures & solutions with DOD CST-WMD units for Chem/Bio & mass casualty incidents – including the treatment of casualties associated with Toxic Industrial Chemicals, Toxic Industrial Materials or biological events such as an epidemic.

**Amount Requested:** \$7,500,000

**Intended Recipient and Location:** Honeywell  
Morristown, NJ

**Project Name:** Highly Mobile Wizard Electronic Warfare System

**Project Purpose:** Honeywell is developing a portable advanced active electronic countermeasure system to address remotely-controlled IED threats to the dismounted soldier, with an upgrade for vehicles. This will allow individual soldiers and vehicles to control the RF spectrum. Compatible with a soldier's MOLLE and incorporates high density electronics and packaging that considerably reduce its size and weight. FY10 funds will support engineering and test activities to expand capability beyond IED jammer to signal detection and active response,

and reduce it to a mobile radio-sized device.

**Amount Requested:** \$10,000,000

**Intended Recipient and Location:** Hycrete, Inc  
Carlstadt, NJ

**Project Name:** Environmental Intelligent Moisture and Corrosion Control for Concrete

**Project Purpose:** Hycrete's technology represents a significant advancement in concrete performance by making the concrete material ultra-hydrophobic without the need for toxic additives or coatings and by significantly improving resistance to corrosion. The deterioration of DOD concrete structures is a world-wide problem and costs the government significant funding every year. Funding for this project will result in significant life-cycle savings for DOD facilities and supports "green" environmentally-responsible infrastructure construction and repair.

Hycrete's concrete admixtures will improve technical performance of concrete and contribute to the mission readiness of our military by improving facility reliability, readiness and safety.

**Amount Requested:** \$2,100,000

**Intended Recipient and Location:** ID Systems  
Hackensack, NJ

**Project Name:** Wireless HUMS for Condition Based Maintenance of Army Helicopters

**Project Purpose:** Funding will be used to build and deliver an advanced Health and Usage Monitoring System (HUMS) for Army helicopters, enhancing protection for the warfighter through comprehensive implementation of Condition Based Maintenance practices. The implementation of improved maintenance techniques & procedures is central to the U.S. Army's Helicopter Modernization Plan for improving safety, reliability, & deployability of its helicopter fleet. There is a critical need for real-time, on-line monitoring to track helicopter health & usage and prevent incipient mechanical failure during military operations.

**Amount Requested:** \$3,000,000

**Intended Recipient and Location:** II-VI Incorporated, Wide Band Gap Materials Group  
Pine Brook, NJ

**Project Name:** Large Area, APVT Materials Development for High Power Devices

**Project Purpose:** This project will develop a domestic technology and manufacturing base for large area (100mm diameter), high quality silicon carbide (SiC) materials for highly energy efficient, high frequency, and high power applications. Future DOD mission requirements dictate a range of current and next-generation U.S. military and naval systems requiring critical high frequency and high power components with dramatically enhanced capabilities that are unattainable with current technology. Existing silicon-based components for current long-range radar systems are limited in voltage and operational temperature, which adversely impacts system serviceability and transportability. The use of silicon carbide (SiC) technology would result in longer range, increased mobility, and more compact system opportunities and is proposed for development of new radar systems, particularly in the UHF through S-band frequency ranges.

**Amount Requested:** \$3,000,000

**Intended Recipient and Location:** Impact Instrumentation, Inc.  
West Caldwell

**Project Name:** Global Patient Care and Tracking System (GPCATS), LTM

**Project Purpose:** This project will provide funding to complete development and military acquisition testing and allow rapid fielding of the GPCATS (Global Patient Care and Tracking System). The GPCATS is an integrated communication and medical hardware system that allows continuous, real-time monitoring and control of patients anywhere while stationary or during transport by air, sea or ground.

**Amount Requested:** \$4,700,000

**Intended Recipient and Location:** Imperial Machine & Tool Co.  
Columbia, NJ

**Project Name:** Lightweight Munitions and Surveillance System (LMSS) for Unmanned Air & Ground Vehicles

**Project Purpose:** The program 's goal is to produce low-cost guided munitions capable of reaching targets faster than a traditional UAV. These munitions will be more efficient and effective than current guided projectiles of the same caliber with larger payloads and the ability to change targets or be recalled mid-flight. With additional funding, current research can be accelerated, completed, and transferred to other caliber weapons

**Amount Requested:** \$4,800,000

**Intended Recipient and Location:** InSitech  
Picatinny Arsenal, NJ

**Project Name:** Advanced Prototyping with Non Traditional Suppliers

**Project Purpose:** The Army is authorized to demonstrate how non-traditional DOD supplier technology can be utilized to fight the global war on terror. Innovative business practices are utilized to facilitate the use of commercial resources and networks to transfer technology to support war fighter needs, at the same time creating additional sources of supply base to the DOD. This project has already made significant progress towards enabling non-traditional suppliers of military technology from small companies to be prototyped and tested by the US Army. The objectives are to field advanced capabilities to the Warfighters and in the process create economic activity for small companies in NJ. Those companies judged to be of highest value by the Army will receive direct funding from ARDEC, through this program, which will enable them to provide prototypes for ARDEC.

**Amount Requested:** \$1,500,000

**Intended Recipient and Location:** Insitech-MTAC Corporation  
Princeton, NJ

**Project Name:** New Jersey Technology Center

**Project Purpose:** Insitech-MTAC, Inc. is a consortium of New Jersey companies that have formed a non-profit entity to contract with the U.S. Army to employ current Ft. Monmouth workers that choose not to move with the C4ISR mission to Aberdeen, MD. Insitech-MTAC Corporation was awarded, by the NJ Department of Labor and Workforce Development, a grant to establish the NJ Technology Center and contract with the Army to keep mission critical people and tasks in New Jersey while the mission rehires in Aberdeen. This will allow the Army

to have reach back and training capabilities for its new employees.

**Amount Requested:** \$3,000,000

**Intended Recipient and Location:** Integrated Systems Solutions, Inc. (ISSI)  
Lakehurst, NJ

**Project Name:** Marine Mammal Detection System to Support Navy Training

**Project Purpose:** This funding will support a U.S. Navy research and development project to demonstrate the feasibility of using an advanced sensor-carrying aircraft to provide airborne marine mammal detection and tracking in coastal training ranges used by the U.S. Navy fleet. The Marine Mammal Detection System (MMDS) will use a multi-sensor strategy to detect marine mammals from the air at long range and will include passive acoustic arrays, sea-searching radar, sub surface hyper-spectral imaging, as well as high-resolution optical and infrared cameras. The objective of the MMDS is to improve the method of detecting and tracking marine mammals to support Navy training exercises. The MMDS will assist the Navy with adhering to Marine Mammal Protection Act and improve the operational readiness of the Navy fleet.

**Amount Requested:** \$3,500,000

**Intended Recipient and Location:** International Brain Research Foundation (IBRF)  
Edison, NJ

**Project Name:** Mild to Severe Traumatic Brain Injury and Disorders of Consciousness

**Project Purpose:** To improve accuracy of diagnosis and treatment of TBI with severe disorders of consciousness by providing cutting-edge diagnostic and treatment methodologies, fund research, develop neurophysiological marker, gather appropriate prognostic insights (including QOL), test treatment efficacy, and establish objective criteria on which to base return-to-duty decisions and discriminate between individuals with PTSD, depression and minimal neurologic deficits following TBI.

**Amount Requested:** \$9,500,000

**Intended Recipient and Location:** ITT Electronic Systems  
Clifton, NJ

**Project Name:** AN/ALQ 211 Networked EW Controller

**Project Purpose:** The ALQ 211 Networked EW controller is a system that provides increased situational awareness and increased survivability for combat aircraft over the battlefield. The system distributes threat warning information to aircraft in the immediate area, ensuring that all aircrews have the same awareness of the anti-aircraft threat, regardless of individual aircraft survivability system configuration. These capabilities are considered essential to protect rotorcraft against modern hostile threat systems. Insurgent anti-helicopter threats have evolved and we must readdress the threat to protect pilots, aircrews and passengers. Reducing losses also reduces the expense of replacing downed rotary wing assets.

**Amount Requested:** \$3,300,000

**Intended Recipient and Location:** ITW Covid Security Group Inc  
Cranbury, NJ

**Project Name:** Optikey US Army Joint Unified Maritime Protection System (JUMPS)

**Project Purpose:** The Optikey authentication system has been developed under contract with the US Air Force and is at a point where additional funding will transition the current prototype system into a full production-ready design for the JUMPS program. The funding requested will provide a rapid development of an Optikey architecture that the US Army believes will become the standard for cyber security for future command, control, and communication systems.

**Amount Requested:** \$6,300,000

**Intended Recipient and Location:** JFK Johnson Rehabilitation Institute  
Edison, NJ

**Project Name:** Evaluating the Effectiveness of an Intensive Cognitive Rehabilitation Program for Service Members with Traumatic Brain Injury

**Project Purpose:** The JFK Johnson Rehabilitation Institute will study the benefit of an intensive cognitive rehabilitation program (ICRP) to a standard neurorehabilitation program (SRP) for military populations with Traumatic Brain Injury (TBI). Rehabilitating service members with TBI is recognized by federal policymakers to be a significant and escalating challenge to the military and veterans health care systems.

**Amount Requested:** \$1,000,000

**Intended Recipient and Location:** Kearfott Corporation  
West Paterson, NJ

**Project Name:** Common Inertial Measurement Unit Development

**Project Purpose:** The Missile Defense Agency requires a low cost, radiation hardened, small & lightweight inertial measurement unit (IMU) for various applications. Customized IMUs are too expensive and are not radiation hard to satisfy these needs. Furthermore, MDA had to fund multiple IMU developments customized for various applications and missile providers. In order to avoid such expensive multiple developments, MDA is developing a common IMU (CIMU) to meet these requirements. Kearfott Corp. was selected after a competitive procurement to develop this CIMU based on its Monolithic Ring Laser Gyro technology.

**Amount Requested:** \$4,000,000

**Intended Recipient and Location:** L-3 Communication Systems East  
Camden, NJ

**Project Name:** Shipboard Automated Radio Room System

**Project Purpose:** The Shipboard Automated Radio Room System will reduce the manning and training costs required to operate a radio room by using an existing, recently developed, automated integrated communications software. It is the first and only surface ship automated communications program in production, fully fielded and logistics supported. SPAWAR PMW 760 has spent years trying to automate the radio rooms, yet there is no fielded system. There is no single way to control and monitor all this equipment. It takes sailors hours to create, establish, and verify these communication plans. All this manpower, training and extra equipment is very costly. This program will validate that a single operator, in minutes, can replace what took several operators hours to complete, while significantly improving reliability.

**Amount Requested:** \$4,000,000

**Intended Recipient and Location:** LGS Innovations  
Florham Park, NJ

**Project Name:** Secure, Miniaturized, Hybrid, Free Space, Optical Communications

**Project Purpose:** LGS Innovations will develop a fully operational secure, miniaturized, RF optics propagation hybrid wireless communications system meeting the application specific volume, weight, and power constraints required for secure, covert defense-related communication applications for the Department of Defense. This program leverages the successful result of the prior program and in response to a new operational need. This initiative addresses immediate operational requirements and funding will complete the R&D needed to rapidly develop, demonstrate, and deploy Free Space Optical methods of wireless communication.

**Amount Requested:** \$6,000,000

**Intended Recipient and Location:** LGS Innovations, LLC  
Florham Park, NJ

**Project Name:** Planar Lightwave Circuit (PLC) Development for High Power Military Laser Applications

**Project Purpose:** LGS Innovations will develop a revolutionary high power, high efficiency, electrically-driven laser technology that can be turned into a ruggedized system for use by all branches of the military. LGS will leverage its rich Bell Labs heritage in Planar Lightwave Circuits (PLCs) to develop a novel high power laser-on-a-chip to meet this need. This approach offers several compelling advantages over other technologies including dramatically reduced size and weight, higher efficiency, and longer operating life. The DoD has an operational need for deployable high power lasers with reduced power consumption and long life for military applications. Completion of this project will directly benefit our armed forces with superior defenses against multiple threats, including IEDs, surface-to-surface missiles, and UAVs.

**Amount Requested:** \$3,800,000

**Intended Recipient and Location:** LifeCell Corporation  
Somerville, NJ

**Project Name:** Strattice Dermal Matrix Research

**Project Purpose:** The Strattice Dermal Matrix Research (SDMR) project leverages the work completed thus far in our Acellular Matrix Research program. SDMR's program involves xenogeneic therapy, the use of animal tissues or cells suitably adapted for transplantation or grafting in a human recipient. The goal of this program is to develop an off-the-shelf transplantable graft from porcine tissue for combat casualties with full-thickness burns and other skin and dermal deficits prior to their evacuation from the theater of operation.

**Amount Requested:** \$3,000,000

**Intended Recipient and Location:** Lockheed Martin Maritime Sensors and Systems  
Moorestown, NJ

**Project Name:** Aegis BMD Radar and Signal Processor Improvements

**Project Purpose:** Aegis Sea-Based Ballistic Missile Defense (Aegis BMD) is a successful and

integral part of the Ballistic Missile Defense System (BMDS). Aegis BMD equipped ships have successfully engaged in 14 of 18 exo-atmospheric intercepts of theater ballistic missile class targets and within six weeks from notification to operation execution, the Aegis BMD 3.6 Program was rapidly modified to support the successful destruction of a de-orbiting satellite. The Aegis BSP is the next generation of Aegis BMD capability. This funding request would initiate and accelerate Aegis BMD radar and signal processor improvements in FY10 to provide robust air and missile defense enhancements for track and discrimination of longer range and more complex emergent threats.

**Amount Requested:** \$30,000,000

**Intended Recipient and Location:** Lockheed Martin MS2  
Moorestown, NJ

**Project Name:** Navy Open Architecture Acceleration

**Project Purpose:** As part of the United States National Maritime Strategy, this project is of the highest importance to the defense of our Nation and critical Sea Power assets. It will facilitate the Navy's Acquisition Management goals of Open Architecture, increased competition, Rapid Capability Insertion (RCI), component reusability and affordability. These activities will help reduce risks associated with development, test, and evaluation (DT&E) of future combat system upgrades.

**Amount Requested:** \$5,000,000

**Intended Recipient and Location:** Marotta Controls  
Montville, NJ

**Project Name:** Advanced Fluid Controls for Shipboard Application

**Project Purpose:** Marotta Controls will continue to develop shipboard fluid controls using composite materials to reduce weight, reduce corrosion, reduce life-cycle costs, increase fuel efficiency, and incorporate Smart Technology to monitor the operation and performance of the equipment. Particular attention will be paid to the ability to produce "Smart" solutions, products, and systems, which can provide inherent intelligent control and interface directly with the ship's main computer. These composite valves and advanced fluid controls will have multiple applications for both pneumatic and hydraulic applications; significantly increasing the reliability of fire fighting systems to enhance safety and survivability; and improving relief valve assemblies that are prone to failure.

**Amount Requested:** \$5,000,000

**Intended Recipient and Location:** MaXentric Technologies, LLC  
Fort Lee, NJ

**Project Name:** Man-pack Satellite Micro-Terminal

**Project Purpose:** MaXentric Technologies will manufacture a fully functional military grade Man-pack Satellite Micro-Terminal (3rd Generation) which will meet the Air Force's goal of a highly miniaturized satellite communication terminals (Micro-terminals) that are capable of operating over the WGS or XTAR satellites, integrate the desirable SATCOM modem technologies, have a small and modular form factor, are ultra power efficient to reduce battery size requirements and to substantially reduce terminal costs. The Man-pack Satellite Micro-Terminal will satisfy the US Air Force's and DoD's ongoing efforts to reduce size, weight, and cost of satellite micro-terminals, which are primarily used by personnel in remote

and hostile regions. It can be used by all branches of the military and will replace much larger, heavier, and more expensive portable satellite terminals.

**Amount Requested:** \$3,000,000

**Intended Recipient and Location:** Menssana Research  
Fort Lee, NJ

**Project Name:** Point-of-Care Breath Test for Cancer

**Project Purpose:** Menssana Research has successfully tested a breath test that can predict breast cancer with a high degree of accuracy in a pilot study by the National Institutes of Health. The requested funding would be used for a multi-center clinical study that would fulfill FDA requirements for marketing approval for a point-of-care version of the breast cancer breath test. Many military families are affected by breast cancer and the cost to DoD's health system is high.

**Amount Requested:** \$4,000,000

**Intended Recipient and Location:** MILSPRAY Military Technologies  
Lakewood, NJ

**Project Name:** Project Helios

**Project Purpose:** MILSPRAY Military Technologies will provide for late stage development and testing of two special purpose military coating systems. For the purpose of reducing the thermal footprint of tactical vehicles, weapon systems, buildings, and communications equipment. Additionally, the coating materials can be engineered to insulate military food (MRE) storage containers, ISO containers, buildings, shelters, and the interior cabs of tracked vehicles. Emphasis will be on applied research and technology demonstration, in support of near-term and large scale application of these materials. Use of this material is intended to reduce the thermal signature of military vehicles which in turn makes them less of a target for heat seeking missiles and other thermal weapon systems. The materials also have potential use as solar reflective barriers that would reduce the internal temperature of vehicles, food containers, buildings, shelters, and other equipment adversely affected by extreme desert conditions.

**Amount Requested:** \$2,450,000

**Intended Recipient and Location:** New Jersey Department of Military and Veterans Affairs  
Trenton, NJ

**Project Name:** Re-establishing Ties: The Road from Warrior to the Community

**Project Purpose:** When an active duty service member returns from combat, they return to a military installation that has a multitude of reintegration services available on the base. When a National Guard member returns, they return to the community. In order to insure that the "citizen soldier" receives all of the support necessary to assist their transition, the NJ National Guard has developed an extensive reintegration program that includes: PTSD Screening, TBI Screening, Suicide Prevention and Screening, Referrals to Mental Health Providers, PTSD 24 Hr Hotline for the Soldier and their families, and Yellow Ribbon Grants.

**Amount Requested:** \$5,000,000

**Intended Recipient and Location:** New Jersey Institute of Technology

Newark, NJ

**Project Name:** Perimeter Security Systems

**Project Purpose:** This project will use a 150 acre military compound as a live, virtual and constructive test bed for hardware, software and technology following up the Disruptive Technology Acceleration program. It will provide a testing platform to conduct research and development of technology to enhance situational awareness that will be beneficial to the warfighter. It will focus on developing and integrating COTS and GOTS technologies to provide adaptive and interoperable networked solution standards for defense operations. Military and civilian personnel and materiel are intermingled at an increasing rate, especially as the Global War on Terror puts US troops in peacekeeping roles overseas among potentially hostile population groups. Protecting these operations from unauthorized entry requires a layered defense model that deters, detects, delays and defends. The Perimeter Security System will provide that layered defense model.

**Amount Requested:** \$5,000,000

**Intended Recipient and Location:** Ocean Power Technologies

**Project Name:** Persistent Surveillance Wave PowerBuoy System

**Project Purpose:** Protecting U.S. ship assets and port facilities is the Navy 's highest priority. This project will provide the Navy with a viable system for protecting critical infrastructure and military assets from surprise maritime terrorist attacks and will include a system that detects and locates surface and subsurface threats. Ocean Power Technologies, Inc. (OPT) and Rutgers University will develop port and harbor security solutions to enhance security for the U.S. Navy. Integrating existing technology known as a PowerBuoy with HF radar components, OPT and Rutgers will create a Vessel Detection and Tracking System to provide afloat maritime surveillance and security in the near coast, harbors, piers and littorals worldwide.

**Amount Requested:** \$4,000,000

**Intended Recipient and Location:** Omega Group - Waterfront Technology Center  
Camden, NJ

**Project Name:** New Jersey Intelligence-Led Policing Portal (NJILPP) Program

**Project Purpose:** The U.S. Army ARDEC at Picatinny, New Jersey is leading an effort combining and harmonizing a number of Homeland Defense and Homeland Security programs involving government, academia and industry with a project entitled Project National Shield (PNS). The intent of PNS is to establish the mission value of a network of virtual communication/collaboration capabilities fielded by the Department of Defense (DOD) that will support Small Unit Operations (SUO) as part of the DOD Civil Support mission. The Omega Group will create a state-wide intelligence-led policing portal combining crime analysis, situational awareness and virtual communications/collaboration capabilities that will analyze crime and intelligence data being generated throughout the day with resulting insights/actionable information immediately disseminated to command and field personnel such that small unit operations and tactical enforcement plans of the day can be adapted in real-time to optimize operations and better shape daily outcomes.

**Amount Requested:** \$2,500,000

**Intended Recipient and Location:** Phacil, Inc  
Camden, NJ

**Project Name:** Advanced Decision Support System Serving the Missile Defense Agency

**Project Purpose:** This request is to fund an advanced information technology decision support system to assist the Missile Defense Agency in meeting its mission of developing and fielding a Ballistic Missile Defense System (BMDS). This program will deliver the Missile Defense Agency Software Modules. These modules for Microsoft Sharepoint are designed to exchange information with existing and legacy documents and information in order to efficiently and cost-effectively manage a DoD ACAT Acquisition Program through its various management review and milestone decision points. This project will benefit the Missile Defense Agency by increasing the pace at which knowledge-based acquisition practices are adopted by the enterprise.

**Amount Requested:** \$3,120,913

**Intended Recipient and Location:** Medarex /PharmAthene, Inc.  
Princeton, NJ/Annapolis MD

**Project Name:** Anthrax Monoclonal Antibody Antitoxin Therapeutic and Prophylaxis Program

**Project Purpose:** Anthrax Monoclonal Antibody Antitoxin Therapeutic and Prophylaxis Program (Valortim) is a fully human monoclonal antibody designed to protect against and treat inhalational anthrax, the most lethal form of illness in humans caused by the Bacillus anthracis bacterium. Medarex and PharmAthene Inc. will generate data demonstrating that the use of Valortim will provide a safe and effective countermeasure against anthrax exposure. Such a product will ensure that the warfighter and first responders will have full protection against anthrax in the event of an anthrax attack on the battlefield or in the event of a civilian attack

**Amount Requested:** \$6,000,000

**Intended Recipient and Location:** Pharming Healthcare Inc.  
Jersey City, NJ

**Project Name:** Advanced Therapies for Battlefield Trauma

**Project Purpose:** The US Department of Defense Guidance for Development of the Force identifies control of blood loss as the top priority in military healthcare R&D. Pharming Healthcare proposes to use new technologies to address the two key aspects of this problem: stop life threatening bleeding and minimize consequences of bleeding. Fibrinogen is required to stop bleeding because it provides the main structure of the blood clot. In severe trauma, such as combat trauma, patients lose the ability to stop bleeding when fibrinogen becomes depleted. Pharming is developing recombinant human fibrinogen (rFib) that has great potential to control bleeding under these circumstances. Following severe bleeding, patients develop potentially lethal inflammatory responses that may be reduced by C1 inhibitor. Pharming is developing recombinant human C1 inhibitor (rC1INH). Current products derived from blood carry risk of disease and have variable quality and availability.

**Amount Requested:** \$2,792,000

**Intended Recipient and Location:** Polymer Technologies Inc.  
Clifton, NJ

**Project Name:** Metal Injection Molding Technological Improvements

**Project Purpose:** This project will establish a technology and manufacturing upgrade that accelerates production from fabricating machined metal parts to producing metal injection

molded parts at production rates with significantly reduced costs in excess of 60 percent. The worldwide military environment has reached a point where there is a premium placed on fast and affordable manufacturing for defense systems. Development and application of innovative approaches to rapid, low-cost manufacturing are critical to the continued success of the United States military. Introducing upgraded manufacturing techniques will enable DOD to provide our warfighters with highly accurate and capable weapons at a lower cost and greater efficiency.

**Amount Requested:** \$1,500,000

**Intended Recipient and Location:** PRICE Systems, LLC  
Mount Laurel, NJ

**Project Name:** Software Lifecycle Affordability Management (SLAM) Phase III

**Project Purpose:** The Software Lifecycle Affordability Management (SLAM) Phase III project will provide decision makers a means to understand cost tradeoffs in relation to both performance and Total Cost of Ownership (TCO). The ability to trade capabilities, risk, schedule, and cost in software system design and affordability simulations related to Service Oriented Architecture (SOA) is a critical capability to reduce wasteful spending of federal funds on military programs and eliminate the potential for a Nunn-McCurdy cost breach. Affordability management initiatives such as SLAM have wide ranging applicability for saving millions of dollars related to the development of software and information. This is especially critical as new initiatives such as SOA which addresses not only the Army's, but DoD's most pressing goals - increasing application interoperability without funding risky replacement projects emerges as a prevalent technology.

**Amount Requested:** \$5,000,000

**Intended Recipient and Location:** Primis Technologies, LLC  
Princeton, NJ

**Project Name:** Advanced Sensing Technologies for Demilitarization Applications

**Project Purpose:** The Advanced Sensing Technologies for Demilitarization Applications will develop real-time, non-destructive test systems to monitor ammunition degradation. This will enable the Army to perform real-time, on-site chemical and aging tests to prevent catastrophic self-ignition caused by degraded ammunition. Real-time, non-destructive testing technology has been identified as a critical need by the U.S. Army, which conducts over 40,000 chemical and aging tests annually to prevent catastrophic self-ignition caused by degraded ammunition constituents. Primary testing procedures are expensive, inefficient (up to seven hours) and produce large amounts of hazardous chemical waste. Testing with Primis's lasers will take less than one minute, significantly decrease cost and minimize hazardous waste.

**Amount Requested:** \$2,000,000

**Intended Recipient and Location:** Raytheon Corporation  
Picatinny Arsenal, NJ

**Project Name:** Semi-Active Laser (SAL) Mortar Maturation

**Project Purpose:** A Joint Urgent Operational Needs Statement (JUONS) from units in Afghanistan states the need for GPS-guided precision mortar rounds. The accuracy requirement for the program cannot be met with GPS-only guidance and insufficient funding is available in

the President's FY10 Budget request to develop a guidance package to meet this requirement. SAL will significantly increase mission flexibility and the combined guidance package will allow moving targets to be precisely engaged with mortar fire. Requested funding would allow design and development of a size and weight appropriate SAL in parallel with the Accelerated Precision Mortar Initiative effort, giving Army program managers the opportunity to require the production program to insert the capability as early as the initial Full Rate Production lot in FY11.

**Amount Requested:** \$7,500,000

**Intended Recipient and Location:** Raytheon Corporation  
Picatinny Arsenal, NJ

**Project Name:** Solid State W Band Development: Non-Lethal Systems

**Project Purpose:** Active Denial (AD) Systems have successfully demonstrated the ability to stop, deter, and turn back people without causing them harm. In order to make this technology tactically viable to mobile forces, the current gyrotron tube-based technology must be replaced by smaller, lighter, lower cost systems that allow AD technology to be integrated with ground combat vehicles. The key enabler for this size and cost reduction is a versatile high power solid state W-band Electronically Steered Arrays. US mobile ground forces in Iraq and Afghanistan lack compact, extended range, non-lethal systems to maintain order and protect our forces without causing destabilizing collateral casualties. The development of a high power solid state W-band Array will provide a more durable, compact, and tactically survivable system that will increase operational readiness and reduce life cycle costs.

**Amount Requested:** \$2,500,000

**Intended Recipient and Location:** Reade Manufacturing Company  
Manchester, NJ

**Project Name:** Magnesium Alloy Powders For Energetic & Structural Applications

**Project Purpose:** The objective is to develop new magnesium alloy powders for military applications that will be used to design tunable pyrotechnic devices; providing superior controlled-performance, longer shelf-life, and improved properties, repeatability and consistency. Similarly, new alloy powders could be used to design lightweight structural components for armaments which would result in improved transportability, ease of deployment, and increased agility & mobility. Magnesium is the lightest structural material - it is 78 % lighter than steel and 35 % lighter than aluminum - yet some of the newly developed magnesium alloys are stronger than existing aluminum alloys.

**Amount Requested:** \$3,500,000

**Intended Recipient and Location:** Robert Wood Johnson University Hospital  
New Brunswick, NJ

**Project Name:** Mass Casualty First Responders Disaster Surge Technology Program

**Project Purpose:** The Mass Casualty First Responders Disaster Surge Technology Program will use Radio-Frequency Identification (RFID) technology to improve effectiveness, efficiency, safety, and satisfaction during disasters/mass casualty events and in routine hospital operations. This will be accomplished through improvement in coordination/processing/management of patients, equipment, supplies, and response personnel. Military personnel will be able to use RFID tags to facilitate command-and-control, communications, situational awareness, facility surge capability, to monitor and maintain adherence to isolation and quarantine, as well as avoid medical errors and enhance patient safety

**Amount Requested:** \$3,000,000

**Intended Recipient and Location:** Rutgers, The State University of New Jersey  
New Brunswick, NJ

**Project Name:** Combat Ration Supplements for Improved Physical and Cognitive Performance Using Nanodelivery Systems to Improve Bioavailability

**Project Purpose:** The objective of this research is to develop the next generation of military foods and beverages to provide the warfighter with rations containing natural, safe and effective nutraceutical extracts. The extracts increase physical and cognitive performance while sparing the use of non-steroidal anti-inflammatory drugs (NSAIDs), which have adverse side effects on the warfighter.

**Amount Requested:** \$2,000,000

**Intended Recipient and Location:** Rutgers, The State University of New Jersey  
New Brunswick, NJ

**Project Name:** Multifunctional Nanomaterials for Homeland Defense, Counter-Terrorism and Dual-Use Applications

**Project Purpose:** The primary mission of this proposal is to establish an R&D partnership between Rutgers University and Picatinny Arsenal (U.S. Army ARDEC) to develop critical nano-based technologies for Homeland Defense, Counter-Terrorism, and Dual-Use (Energy) Applications. This partnership will perform research on the development of a lightweight and transparent armor; IR Transparent radomes and windows; refractory materials; high-power lasers; sensors and energetic materials

**Amount Requested:** \$2,500,000

**Intended Recipient and Location:** Rutgers, The State University of New Jersey  
New Brunswick, NJ

**Project Name:** University Center for Disaster Preparedness and Response

**Project Purpose:** This project seeks to develop the University Center for Disaster Preparedness and Emergency Response (UCDPER), a joint initiative of Rutgers-the State University of New Jersey, University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical

School, and Robert Wood Johnson University Hospital. UCDCPER builds upon the scientific, technical, clinical, and educational expertise and experience of its members to fulfill its academic and real-world missions: to protect the lives, health, and well-being of the general public, vulnerable populations, and the workforce - and to protect the societal, economic, and physical infrastructure of New Jersey and the nation.

**Amount Requested:** \$5,500,000

**Intended Recipient and Location:** Sarnoff Corporation  
Princeton, NJ

**Project Name:** VideoArgus

**Project Purpose:** FY2009 funding was used for the initial phase of development of a video processing system to provide the intelligence analyst and the warfighter with actionable data needed to prosecute the global war on terror. The second phase will enable the progress achieved to be fielded for operational use. Extracting timely and reliable and actionable intelligence from digital video and sensors requires intelligent processing, fusion of multiple sources, semantically aware video networks, robust communication and dissemination, quality control, storage, retrieval, integration with existing and evolving forms of intelligence, and appropriate presentation so the analyst can readily understand the situation and initiate action.

**Amount Requested:** \$4,000,000

**Intended Recipient and Location:** Sea Box  
East Riverton, NJ

**Project Name:** Tactical Metal Fabrication (TacFab)

**Project Purpose:** The Army's deployable Mobile Parts Hospital (MPH) has reduced delivery times for non-standard mechanical parts in the field. MPH, however, is only capable of manufacturing a limited spectrum of machined metal parts. If a Warfighter brings a cast part to MPH for in-theater production, the MPH must "hog" the new part out of steel or aluminum, using a time-consuming and wasteful approach. By using TacFab's mobile cast part production capability, this initial work could be performed much more expediently before finishing by the MPH.

**Amount Requested:** \$4,800,000

**Intended Recipient and Location:** Shan Industries, LLC  
Hamburg, NJ

**Project Name:** Associate Intermodal Platform, AIP

**Project Purpose:** This project will provide the Air Mobility Command with a plastic pallet that will help in air cargo logistics to meet the following demands: humanitarian operations; prepositioning of war materials; retrieval of war materials; and the storage of war materials. The AIP is an eco-friendly rotationally molded plastic pallet designed and manufactured to conform to a concept developed by USTRANSCOM. The AIP adds seamless inter-modal flexibility, while increasing and improving storage, transport and deployment of assets. AIP has forklift pockets, is virtually indestructible, and is lighter, safer and easier to deploy to field.

**Amount Requested:** \$10,000,000

**Intended Recipient and Location:** Specialty Systems, Inc

Toms River, NJ

**Project Name:** New Jersey Intelligence and Force Protection Information Grid

**Project Purpose:** The U.S. Army ARDEC at Picatinny, New Jersey is leading an effort combining and harmonizing a number of Homeland Defense and Homeland Security programs involving government, academia and industry with a project entitled Project National Shield (PNS). The New Jersey Intelligence and Force Protection Information Grid will leverage an emerging capability called Federated Search which will integrate the Army C2 architecture at PNS with Law Enforcement, Public Safety and Intelligence Information sources at municipal, city, county, state and Department of Justice agency levels.

**Amount Requested:** \$2,500,000

**Intended Recipient and Location:** Stevens Institute of Technology  
Hoboken, NJ

**Project Name:** Green Armament and RangeSafe (GAT/RS) Technology

**Project Purpose:** Proposed initiatives directly support the Army's Environmental Requirements and Technology Assessment. The programs have made significant contributions through: development of technology that aided the Army to ensure regulatory compliance; development of environmentally compatible ammunition; and use of industrial ecology and green engineering principles in production plants and firing ranges. This project allows the Army to maintain its training, test and production facilities at top operational level enabling their continued use to ensure war fighting readiness.

**Amount Requested:** \$4,000,000

**Intended Recipient and Location:** Stevens Institute of Technology  
Hoboken, NJ

**Project Name:** Persistent Unmanned Underwater Operations

**Project Purpose:** Unmanned Underwater Vehicles (UUVs) provide access to dangerous or denied environments and perform essential tasks considered too risky for personnel, such as mine hunting and neutralization. Often, however, the utility of existing UUVs is limited. The Stevens Persistent Unmanned Underwater Operations system would be the world's first fully autonomous Unmanned Underwater Vehicle designed for continuous, long-term operation in littoral and estuarine environments. The project will produce technologies, algorithms, and procedures that will benefit DoD and domestic security applications

**Amount Requested:** \$5,000,000

**Intended Recipient and Location:** Stevens Institute of Technology  
Hoboken, NJ

**Project Name:** Security for Critical Communication Networks (SCCN)

**Project Purpose:** The proposed program will address the affordability of Secure Critical Communication Networks for national security and humanitarian operations in four focus areas: systems security, computational intelligence, optical communications, and radio systems. Systems security projects enhance security while reducing costs, making secure computing and

communications more universally available and re-asserting the US lead in technology for humanitarian purposes. The computational intelligence projects expand the technology for computational intelligence from university research to secure and enhance national and humanitarian networks while reducing costs. The optical communications tasks extend principles of wireless communications to optical media, leveraging the newest optical device technologies for more robust, secure communications. The radio communications projects substantially enhance security while reducing the cost of core, tactical and humanitarian wireless networks.  
**Amount Requested:** \$8,000,000

**Intended Recipient and Location:** TreadStone Technologies, Inc.  
Princeton, NJ

**Project Name:** Low Cost Fuel Cell Power System for Unattended Ground Sensors and Tactical Radios

**Project Purpose:** TreadStone Technologies is requesting funding assistance to jointly develop a low cost fuel cell power system for Unattended Grounds Sensors (UGS) and tactical radios with Jadoo Power. The requested funding will allow for TreadStone's state-of-the-art coating technology for metal bipolar plates (LiteCell™) to be utilized in fuel cell power systems to reduce the cost (by approximately 30%) to ruggedize fuel cell systems for military applications, providing adequate power (ranging from 1W to 80W) for unattended ground sensors and wireless communications systems for combat systems.

**Amount Requested:** \$2,500,000

**Intended Recipient and Location:** United Materials Technologies LLC  
Westfield, NJ

**Project Name:** High Strength Metal-Carbon Nanotube Composites

**Project Purpose:** Carbon nanotubes are cylinders of carbon that can be envisioned as single or multiple sheets of graphite rolled into tubes. They have tensile strengths 20 times that of steel, intrinsic electrical conductivity greater than that of copper and thermal conductivity along the tube axis that is much higher than that of diamonds. This process will simultaneously synthesize and incorporate the carbon nanotubes into iron. It is then intended to scale-up the CVI process to make high strength, light weight steel parts for testing in military vehicle and armor applications.

**Amount Requested:** \$1,500,000

**Intended Recipient and Location:** UXB International, Inc  
Flemington, NJ

**Project Name:** Static Detonation Chamber at Picatinny Arsenal

**Project Purpose:** Picatinny generates up to 55,000 lbs of waste energetics (propellants and explosives) and energetic contaminated material per year. This waste stream consists of various munitions items, bulk propellants and explosives, often made in small sample batches for experimental purposes, as well as contaminated disposable laboratory implements. The ARDEC Demil & Environmental Technology Division (D&ETD) has identified a technology, the Static Detonation Chamber (SDC), provides a safe, flexible, low-cost, environmentally sound alternative to current technology to address the shortcomings of Picatinny's energetics waste disposal system.

**Amount Requested:** \$4,900,000

**Intended Recipient and Location:** Valley Hospital  
Ridgewood, NJ

**Project Name:** Valley Hospital Medical Errors Reduction Initiative: Stage IV

**Project Purpose:** The Valley Hospital is launching the next stage of its highly successful Medical Errors Reduction Initiative with the Department of Defense by implementing an operational excellence system that will fundamentally transform patient care by allowing for real time monitoring and management of all hospital operations with a focus on enhancing patient safety and outcomes.

**Amount Requested:** \$2,500,000