

Project Name	Purpose	Intended Recipient	Location	Amount Requested by Organization (in thousands)	Justification
Advanced Aerospace Material Technologies for Modernizing the Aging Fleet	to improve fatigue and corrosion performance, and to extend the lifespan of legacy aircraft platforms.	Alcoa Davenport Works and Alcoa Technical Center	Alcoa Center, PA	\$5,000	Alcoa intends to develop, demonstrate, and implement advanced material designs, processes, and technologies to reduce cost and weight, to improve fatigue and corrosion performance, and to extend the lifespan of legacy aircraft platforms.
Advanced Aluminum Solution for Ship Design and Affordable Construction	to address costs of fabrication and joining of aluminum marine structures	Alcoa Davenport Works and Alcoa Technical Center	Alcoa Center, PA	\$7,000	Utilizing its integrated design-for-manufacture methodology proven in the automotive, aerospace, military ground vehicle and naval arenas, Alcoa will help the Navy achieve its weight, cost, and survivability objectives for the LCS, SSC, and JHSV programs.
Advanced Digital Hydraulic Hybrid Drive System	to address the fuel efficiency and weight issues by military vehicles	Eaton Corporation	Southfield, MI	\$4,000	This program will address both the fuel efficiency and weight/volume issues faced by military vehicles by providing over 60% improvement in fuel efficiency and dramatically reducing the weight of the drive system.
Aeri: Aircraft Evaluation Readiness Initiative	to improve inspection of aging aircraft	Iowa State University	Ames, IA	\$3,000	National security relies on the readiness of the U.S. Air Force (USAF) fleet. Yet, the events and consequences of 9/11 have highlighted concerns with defense readiness and the state of the U.S. military infrastructure. Utilization of military assets in Iraq and Afghanistan, in particular, have contributed to the rapid acceleration of the aging process of our fleet when compared to peace time missions. Cost pressures on existing and new systems, and ever increasing performance requirements, together drive the need for advanced inspection technology solutions.
AFSOC C-130 On-Board Oxygen Generation System (OBOGS) Retrofit	to retrofit on board oxygen generation systems on aircraft	Carleton Life Support Systems	Davenport, IA	\$8,000	Retrofitting the aircraft with OBOGS not only supports the US Air Force's goals of eliminating hazardous Liquid Oxygen (LOX) systems currently used on existing USAF platforms but would also achieve key AFSOC requirements to reduce aircraft weight, increase aircraft time on station and significantly reducing logistics footprint and reachback.
Arsenal Support Program Initiative (ASPI)	to encourage commercial use of underutilized facilities at the Arsenal	Rock Island Arsenal	Rock Island, IL	\$8,000	This funding will further the refurbishment use of underutilized facilities and continue to reduce Army's facilities overhead over the long term.
Bio-Diesel Algae Fuel Production Program	to address the alternative fuel needs for the army	Bio-NRG LLC	Mount Pleasant, IA	\$3,000	This is a valuable use of taxpayer funds because it addresses these vital challenges and opportunities: 1) significant job losses experienced in eastern Iowa over the past year, 2) strong need for energy independence within the United States, and 3) eastern Iowa's unique capacity to achieve that goal.
Building 360 Net Zero Energy Use Project	to renovate building 360 on the Arsenal	Rock Island Arsenal	Rock Island, IL	\$4,400	DOD must meet energy efficiency goals, and this project would help RIA and the Army meet the goals that have been mandated.

CH-47 F Common Avionics Architecture System - Pilot Vechle Interface	to reduce the workload of army aviators by improving cockpits	Rockwell Collins	Cedar Rapids, IA	\$3,400	There is a serious need for reduced pilot workload to assist army pilots and crewmembers as they prosecute the war on terror. This proposal is to make timely long lasting changes to the CAAS cockpit of the CH-47F aircraft through an effective PVI program. The results of such an activity will reduce aircrew workload and deliver a safer more usable system to the field.
Defense Advanced GPS Receiver (DAGR)	to enhance the capabilities of the handheld GPS receiver	Rockwell Collins	Coralville, IA	\$5,000	To date over 275,000 DAGR units have been successfully delivered on schedule to the Army. However, additional funding is needed to further increase the numbers of DAGRs for handheld use by the war-fighter. Due to the fact that approximately 60% of fielded DAGRs have been installed in vehicles, there remains a GPS void that can only be filled by further DAGR procurement to meet the handheld Soldier requirements. It is recognized that there is a need for more DAGRs to supplement the ones that our war-fighters have in the field and also the need for situational awareness capability for the individual soldier in order to harness battlefield information and operate the radios and position/navigation system (DAGR), thereby enabling the soldier to be more efficient and effective in combat.
Development of Flooded Lead Acid Batteries for Start-Stop and Micro-Hybrid Applications	to develop an inexpensive domestic supply of hybrid batteries	Exide Technologies	Alpharetta, GA	\$2,500	The research that Exide Technologies proposes to do will not only reduce the cost of micro-hybrid batteries – making hybrid vehicles more affordable to the general public – but also will create a manufacturing base for this type of battery in the United States in general and Iowa in particular.
Emergency Management Staff Trainer Web-based Distributed Learning Courseware	to provide better training for National Guard soldiers	MediaTech	Centerville, IA	\$2,000	The National Guard Bureau is seeking high quality, cost effective training for the young men and women who staff each state's Joint Operation Center (JOC), charged with planning, directing, monitoring and assessing the state's response to natural and manmade disasters.
Epidemiologic Health Survey	to study the health effects of former munition workers	The University of Iowa	Iowa City, IA	\$915	The munitions industry is a large and by definition hazardous industry. Some facilities are producing explosive materials and propellants basically the same way they were produced decades ago and although safety is a critical element of this industry the inherent hazards are not as well understood as they ought be.
Galfenol Energy Harvesting	to develop technology that would allow the Navy to fulfill a number of modernization goals	ETREMA Products, Inc.	Ames, IA	\$3,650	Goals: The first is the reduction in crew sizes because of reduced manning requirements enabled by automatic system monitoring. A second goal is moving toward the All-Electric-Ship design philosophy without adding the weight and complexity of hardwiring all of the individual sensing systems. A third benefit is in increased survivability of a vessel in the event of an emergency or attack.
HyperAcute Vaccine Development	to develop a more effective vaccine for biological defense	BioProtection Systems Corporation	Ames, IA	\$9,720	Pathogen protection is clearly identified in the National Defense Strategy dated June 2008. We must build both our ability to withstand attack – a fundamental and defensive aspect of deterrence – as well as improve our resiliency beyond an attack.
IAAP energy Infrastructure	to incorporate better energy efficiency processes for the buildings at the Plant	Iowa Army Ammo Plant (American Ordinance)	Middletown, IA	\$5,800.00	The Iowa Army Ammunition Plant (IAAAP) needs to implement an Energy Conservation & Management Project in order to be in compliance with federal law, and to save both taxpayer funding and scarce energy resources.

Innovative Copper Applications Initiative		PMX Industries	Cedar Rapids, IA	\$11,250	Copper is also critical to the military's surge and sustainment needs such as war stopper items: food, clothing and other nutritional requirements. The military recognizes the essential role copper plays and has produced tangible requests for such a comprehensive and integrated initiative
Intergrated Manifold and Tube (IMAT) Ceramic Oxygen Generator	to transition the Navy from stored gas to real time oxygen generation systems	Carleton Life Support Systems	Davenport, IA	\$9,000	This IMAT technology has the potential to revolutionize the way aviation oxygen requirements are satisfied. Aviation IMAT oxygen generators would require a modest amount of electricity to operate, thus freeing overburdened aircraft pneumatic systems from providing pressurized air, as needed in pressure-swing adsorption systems.
Iowa Biorefinery Pilot for Defense Applications	to develop a source of fuel and chemicals for the military from biomass	Frontline BioEnergy and Lynntech, INC.	Ames, IA and College Station, Texas	\$6,000	The Army is particularly interested in splitting hydrogen from the biomass derived syngas stream for use in high efficiency fuel cells for power generation. Hydrogen can also be used by the Army to produce Ammonia in modular electrochemical cells as an essential tool for decontamination after a chemical attack.
LVC: Advanced Live, Virtual, and Constructive Training Systems	to develop of immersive virtual warfighting environments.	Iowa State University	Ames, IA	\$7,000	Keeping up with the unique demands of urban combat and the ever-changing tactics of the insurgency in Afghanistan and elsewhere requires flexible and adaptive training systems that can be modified rapidly and deployed reliably and effectively in the field. The Virtual Reality Applications Center (VRAC) at Iowa State University has a scientific team leading research in the development of immersive virtual warfighting environments.
Midwest Counterdrug Training Center	to continue the counterdrug training needs for law enforcement	Iowa National Guard	Johnston, IA	\$7,000	In this era of shrinking budgets, especially for local and state agencies, training is usually the first to be sacrificed. Current, applicable, effective training is essential to assuring that law enforcement can continue to accomplish the mission of protecting public safety.
Miniaturized, Multiplexed Protein and Toxin Detection System	to develop a system for rapid detection and identification of toxins for biodefense	Aspera, Corp	Ames, Iowa	\$1,650.00	The threat of bioterrorism whether it is to the population or to the crops and agricultural industries has not diminished. If anything the methods and means for delivery of bioterrorism materials has become more sophisticated and subtle.
Multi-Utility Materials for Army Future Combat Systems	to test materials for better armour systems	Iowa State University	Ames, IA	\$9,000	The U.S. Army is facing rapidly evolving combat requirements. Changes in military tactics - from air-based sorties to ground-based combat responses to terrorist activities - and related political instabilities that have emerged in Afghanistan and Iraq, have placed a significantly increased burden on the soldier. To enable our warfighters to operate with the greatest efficiency and personal safety possible, advances in supporting and enabling technologies are urgently required.
Navy AIT Logistics Modernization Initiative	to modernize the Navy's supply and logistic structure	Intermec	Cedar Rapids, IA	\$6,000	The Naval Supply Systems Command (NAVSUP) has undertaken the planning and 'proof-of-concept' deployment of an automated system to more efficiently manage ordnance, ships' stores, warehouses, medical supplies, and node-to-node visibility of assets by implementing the best commercial practices and products in logistics and transportation supply chain management capabilities.

New Vaccines to Fight Respiratory Disease and Central Nervous Disorders	to develop efficacious vaccines that will protect our military personnel from viral and antibiotic-resistant strains of bacterial pathogens	Iowa State University	Ames, IA	\$6,000	Developing efficacious vaccines that will protect our military personnel from viral and antibiotic-resistant strains of bacterial pathogens, and vaccines to protect the CNS from toxic chemical weapons, would fulfill an important goal for the Department of Defense in the event these destructive pathogens are used against civilians or military personnel in a battle zone.
Next Generation Manufacturing Technologies Initiative (NGMTI)	to accelerate the development and implementation of breakthrough technologies	The University of Iowa	Iowa City, IA	\$2,000.00	U.S.-based manufacturers continue to face deepening challenges: a prolonged recession, a surge in imports from low-wage/high skills countries, a decline in capital investment, and a sharp increase in the cost of doing business in the U.S. These factors have contributed to the loss of some 3 million manufacturing jobs and a continued decline in manufacturing as a percentage of GDP. Meeting these challenges is critical to our nation's economic and military security.
Performance Steel Castings for Improved Weapon Systems Reliability	to improve weapon systems reliability	The University of Iowa	Iowa City, IA	\$4,000	The ability to design lightweight components with robust service performance will ensure weapon system readiness and capability. The availability and lower cost of high performance cast steel will enable the replacement of titanium parts.
Portable Rapid Bacterial Warfare Detection Unit	to develop a rapid bacterial detection system for the warfighter	Advanced Analytical Teachnologies	Ames, IA	\$8,200	This technology provides the rapid response needed to protect our troops from exposure to harmful agents and could also benefit our homeland security as well. For example, early bird flu virus identification in remote areas could help avert a pandemic flu scenario.
Rock Island Arsenal bulding 299 roof replacement	to replace the roof of building 299	Rock Island Arsenal	Rock Island, IL	\$6,000	This is a multi-phase project on a huge building – not completing the project would waste the dollars already expended and the health and safety issues would remain.
Roofing Maintenance Upgrades	to upgrade the buildings at the Plant	Iowa Army Ammo Plant (American Ordinance)	Middletown, IA	\$2,300.00	This program will address Roofing Upgrades for 23 of the roughly 400+ buildings at IAAAP. Aging roofs with significant leaks hovers over multi-million dollar production equipment. Goal is to replace roof surfaces on key production and support facilities throughout the plant. Total cost: \$2.3 M to repair leaks and improve facility as well as quality of life for the production personnel on site.
Self Powered, Lightweight, Flexible Display Unit on a Plastic Substrat	to provide the Army with American made Self Powered, Lightweight, Flexible Display Unit on a Plastic Substrat	Powerfilm, Inc.	Ames, IA	\$3,800	We need more technical and manufacturing jobs in America in industries that are expected to grow significantly in the next 20 years.
Shared Vision	to improve mission training capabilities for the wafighter	Mechdyne Corporation	Fort Monmouth, NJ	\$4,000	Results from experimentation and soldier testing of Shared Vision in 2008 have recommended that the system be incorporated into the current fighting force due to its ease-of-use and significant improvements over existing deployed systems.

SOAR (Student Online Achievement Resources)	to provide online assesment and instructional programs for military families	University of Northern Iowa	Cedar Falls, IA	\$8,000	Military families and their children are under considerable duress as they are frequently transferred from one base assignment to another. This causes significant disruption in the learning process as students adjust to different approaches to and expectations for learning, to say nothing of the social and cultural adjustments. SOAR provides a stable source for assessing achievement levels and for building conceptual and skill levels. It is available to them any time and any place and is a tool for parents to work with their children, as well as for teachers to use in the classroom.
Spray Technique Analysis and Research for Defense (STAR4D)	to expand the use of efficient coating processes	University of Northern Iowa	Cedar Falls, IA	\$2,200	Army rest costs are running approximately \$17 billion to \$18 billion per year. STAR4D painter training has third party documented saving at military bases and DoD painting facilities. It is estimated that every dollar spent on the STAR4D program has provided ROI of \$10.00 the first year. The ROI continues as long as the skilled painter continues to work for the DoD.
Technology Development at the Quad Cities Manufacturing Laboratory	to enhance the capabilities of the Arsenal's joint manufacturing and technology center	Quad Cities Manufacturing Laboratory	Rock Island, IL	\$8,000	Increasingly, the Army is moving to the use of lighter equipment in order to achieve enhanced mobility through air transport. Success of the M777 light weight Howitzer has shown the possibility of reductions of over 50% of the weight of weapon systems without any loss of effectiveness by the use of cast titanium components.
Title III Funding for Low Cost GPS	to provide a low cost, domestically produced GPS receiver	Rockwell Collins	Coralville, IA	\$8,000	A benefit of creating more affordable GPS receivers will be in the creation of 120 jobs in the state of Iowa to produce DAGRs and other military GPS devices. These will span both professional/engineering and manufacturing disciplines and is likely to generate over \$6M /year in wages and taxes for the local economies.
ViriChip Rapid Virus Detection System	to develop rapid detection of pathogens	BioForce Nanosciences, INC.	Ames, IA	\$3,000	The ViriChip system offers numerous benefits for taxpayers. Although its initial development will focus on protection of US soldiers, sailors, airmen and marines, it can easily be modified to monitor water quality, food safety and provide point of care diagnostics for the medical community. The ViriChip system has the potential to improve the quality of life for all Americans.
Wave Basin Facility for Advanced Ship Hydrodynamics Testing and Design	to study hydrodynamics for ship design	The University of Iowa	Iowa City, IA	\$3,100	Construction of a new state-of-the-art wave basin facility for advanced ship hydrodynamics research will enable continued development of high fidelity physics-based simulation software for ship design. This will help ensure U.S. international competitiveness and realization of non-traditional U.S. Navy ships to meet modern warfare mission requirements with reduced cost and technical risk and improved safety. It will also benefit the U.S. commercial shipping industry and off-shore engineering and oil industries.
Wireless Medical Monitoring System (WiMed)	to improve trauma outcomes for troops in the field	Athena GTX	Des Moines, IA	\$3,000	The requested funding will add local Iowa hospitals and clinics to the list of facilities for evaluating the wireless medical technologies of WiMed™ and complete further clinical trials of the technology in-state. WiMed™ will improve trauma outcomes in Iraq and Afghanistan and eventually across the civilian population and any other locations where US troops will be deployed.