DEBBIE STABENOW
MICHIGAN

COMMITTEES:
AGRICULTURE, NUTRITION, AND FORESTRY
BUDGET
ENERGY AND NATURAL RESOURCES
FINANCE

United States Senate

133 HART SENATE OFFICE BUILDING
WASHINGTON, DC 20510–2204

May 1, 2009

The Honorable Carl Levin
Chairman
Committee on Armed Services
228 Russell Senate Office Building
Washington, DC 20510

Dear Senator Levin:

As the Committee begins its consideration of the FY2010 National Defense Authorization Act, I am writing to request support for the following programs. These programs are a good use of taxpayer funds because they meet a local, state or national public need and maintain or create jobs:

Item Name: Applied Power Management Control and Integration (APMCI)
Request: 3,600,000
Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: Global Embedded Technologies, Inc.
Suggested Location of Performance (major portion of the work): Farmington Hills, MI
Purpose/Project Description: The purpose of this request is to objectively evaluate in-vehicle power management and to perform testing of power management and control technology originating from a Small Business Innovation Research program. In addition to creating career-long technical jobs and advancing energy independence, this program directly addresses power management.

Item Name: Dynamometer Facility Upgrade Program- Phase II
Request: 4,500,000
Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: AVL Instrumentation and Test Systems, Inc.
Suggested Location of Performance (major portion of the work): Plymouth, MI
Purpose/Project Description: The Dynamometer Facility Upgrade Program (DFUP) provides the Army with modern physical powertrain simulation and test capabilities. Ultimately this will save lives while leading to increased battlefield performance, safer vehicles, and lower development and testing costs. Five to ten new jobs will be created and current jobs will be

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sustained in the area. These developments will continue to establish Michigan and Metro-Detroit as a global science and technology hub which will attract top global talent to our universities and businesses.

Item Name: Expandable Light Air Mobility Shelters (ELAMS) and Contingency Response Communications System (CRCS) - Illinois National Guard (ILNG)
Request: 5,500,000
Account: OMARNG-Operation and Maintenance Army National Guard
Line: N/A
PE: N/A
Suggested Recipient: Aar Mobility Systems
Suggested Location of Performance (major portion of the work): Cadillac, MI
Purpose/Project Description: The Expandable Light Air Mobility Shelters (ELAMS) and Contingency Response Communications System (CRCS) provides the Illinois National Guard an effective and reliable mobile facility for the execution of battlefield command and control activities, and also, air deployable containers to move essential equipment that accompanies deploying soldiers. The ELAMS/CRCS provides an effective and reliable mobile facility for the execution of battlefield command and control activities, and air deployable containers to move essential equipment that accompanies deploying soldiers. In addition, this particular product line employs 50 workers and will create an additional 25 jobs in the Cadillac community.

Item Name: Nano-Bio-Hybrid Solar and Light Energy Scavenging Systems at Michigan Technological University
Request: 2,000,000
Account: RDA-Research & Development Army
Line: 5
PE: 0602105A
Suggested Recipient: Michigan Technological University
Suggested Location of Performance (major portion of the work): Houghton, MI
Purpose/Project Description: Solar and light harvesting energy systems are not pervasive because of the high cost of materials and fabrication and losses in electrical transmission from centralized sources. Solar is only periodically available, and there needs to be more efficient energy storage options. In addition to direct solar, interior lighting contains energy that could be locally scavenged for interior energy supplies. Nanotechnology can address these issues by reducing the battery payload of soldiers, and reducing dependency on petroleum fuels for generators.

Item Name: Combining High Dynamic Range Photography and High Range Resolution RADAR for Pre-Dischrge Threat Cues at Michigan Technological University
Request: 3,500,000
Account: RDA-Research & Development Army

Line: N/A
PE: 63005/D221
Suggested Recipient: Michigan Technological University
Suggested Location of Performance (major portion of the work): Houghton, MI
Purpose/Project Description: The purpose of this project is to develop a joint high dynamic range photography and high range resolution RADAR system on mobile platforms to provide pre-discharge threat warnings in urban and mountain environments. It will significantly enhance the ability of our warfighters to be effective at all levels of the urban battlespace while also providing increased protection for those warfighters.

Item Name: Electric Vehicle (EV) Fast Charging Infrastructure
Request: 2,500,000
Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: National Automotive Center, U.S. Army Research Development and Engineering Command
Suggested Location of Performance (major portion of the work): Warren, MI
Purpose/Project Description: The Army plan to field Electric Vehicle (EV) fleets requires a viable, fast-charging infrastructure and concept of operations. Fiscal year 2010 funding will demonstrate commercially available state-of-the-art EV charging stations at the National Automotive Center in Warren, MI. It will help create the infrastructure to make the next generation of passenger and utility EVs a reality. Fast-charging systems reduce the time required to charge batteries while maximizing range, performance, and lifespan. Today's systems deliver productivity, energy efficiency, and reduce CO_2. The program will not only facilitate the Army's deployment of EVs but will also help accelerate market acceptance of EVs. Large volume DoD EV procurement and fielding will reduce vehicle unit cost.

Item Name: Lightweight Energy Efficient Smart Actuator System
Request: 3,000,000
Account: RDN-Research & Development Navy
Line: N/A
PE: 0205633N
Suggested Recipient: Beaver Aerospace and Defense
Suggested Location of Performance (major portion of the work): Livonia, MI
Purpose/Project Description: The proposed research collaboration with the Navy replaces heavy, hydraulic actuators with new, smart actuator systems resulting in weight reductions of 30-60%, reducing operating costs by half. Repair or replacement is done at a convenient operating point, thus reducing operating costs. Military aircraft operators and manufacturers have costly expenses related to hydraulic and electromechanical actuators in terms of weight, power requirements, maintenance and rigging time. Full production of the Smart Actuator program will create 50 to 75 new jobs in Michigan while maintaining 100 existing jobs.

Item Name: Chemical & Biological Agent Fate Appropriate Response Operations Tool

Request: 4,500,000
Account: RDDW
Line: R-1 Line 14
PE: 0602384BP
Suggested Recipient: Kettering University
Suggested Location of Performance (major portion of the work): Flint, MI
Purpose/Project Description: The purpose of this project is to utilize the models developed in the Department of Defense Chemical Agent Fate Program in building an operational tool. This tool will provide the operational user with a prediction of the environment faced when chemical agents, biological agents, or toxic industrial chemicals are employed by an enemy, and the tool will recommend the most appropriate response to mitigate the hazard and improve safety for troops and civilians. Refined tactics and concepts of operations will streamline logistics and training to save tax-payer dollars.

Item Name: PointCom: An Enhanced UGV Control System
Request: 1,500,000
Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: Quantum Signal LLC (via US Army TARDEC)
Suggested Location of Performance (major portion of the work): Ann Arbor, MI
Purpose/Project Description: The PointCom project is an effort to increase the effectiveness of unmanned ground vehicle systems via semi-autonomous control and improved interface. This enables soldiers to maintain situational awareness. The resources requested for this project will be used to transition new technology from the lab into greater use. If successful, PointCom will grow more high-tech, high-wage jobs in Michigan. The project will also help soldiers, law enforcement, and others better use robots to keep citizens safe and secure such as eliminating improvised explosive devices, removing suspicious packages, and protecting our borders.

Item Name: Ultra Light Weight Transmission for FCS
Request: 3,350,000
Account: RDA-Research & Development Army
Line: 13
PE: 0602601A
Suggested Recipient: Hybra-Drive Systems
Suggested Location of Performance (major portion of the work): Deerfield, MI
Purpose/Project Description: Hybra-Drive Systems (HDS) has demonstrated a 23 miles-per-gallon High Mobility Multipurpose Wheeled Vehicle. HDS is requesting a $3,350,000 project to complete the 10-month development and 12-month DOD field testing of the HDS-Ultra Light Weight Transmission. The work will include further refinements and the ability to select engine-off capabilities.

Item Name: Automotive Tribology Center
Request: 2,000,000

Account: RDA-Research & Development Army
Line: 4
PE: 0601104A
Suggested Recipient: Oakland University
Suggested Location of Performance (major portion of the work): Rochester, MI
Purpose/Project Description: An Automotive Tribology Center (ATC) is proposed as an academic research unit at Oakland University. The center will perform research that lowers frictional energy losses and enhances reliability and durability of automotive components. The Automotive Tribology Center will create jobs, make our automotive industry more competitive and lead to lower pollution levels from automobiles.

Item Name: Structural Energy Storage for Directed Energy Systems
Request: 8,000,000
Account: RDAF-Research & Development Air Force
Line: 9
PE: 0602201F
Suggested Recipient: Plascore, Inc.
Suggested Location of Performance (major portion of the work): Zeeland, MI
Purpose/Project Description: The Congress is concerned about the deployment of directed energy weapons for all air vehicles. Congress directs the Secretary to immediately begin a program to develop aluminum honeycomb structural capacitors. This project will enable all new military aircraft, including Unmanned Combate Air Vehicle to deploy directed energy weapons. This technology will also provide long-term sustainable employment in below-sea level areas for as many as twenty years, using current military projections. It will also significantly reduce the development expense to the Department of Defense for stealthy UCAVs, as the need for weapons stores will be entirely eliminated.

Item Name: Intelligent Condition Based Vehicle Health Monitoring
Request: 3,500,000
Account: RDA-Research & Development Army
Line: 13
PE: 0602601A
Suggested Recipient: MIS2000/Global Defense, Inc.
Suggested Location of Performance (major portion of the work): Southfield, MI
Purpose/Project Description: Intelligent Condition Based Vehicle Health Monitoring will provide an integrated solution for military needs in the area of condition based maintenance and operational readiness through the application of dynamic neural network learning algorithms and life cycle management. Condition Based Maintenance is a dual use technology that has a wider scope of applications in commercial rather than military markets. It is predicted that the telematics market will grow by $6 billion over the next 5 years (next generation On-tar) and could translate to over 10,000 jobs over the next 5 years.

Item Name: US Army Operator Driving Simulator

Request: 5,000,000
Account: OPA-Other Procurement Army
Line: 169
PE: N/A
Suggested Recipient: FAAC Inc, Ann Arbor, MI
Suggested Location of Performance (major portion of the work): Ann Arbor, MI
Purpose/Project Description: With the Army National Guard assuming greater combat and combat support roles, it is increasingly important that drivers be well trained prior to deployment to combat zones. FAAC is located in Ann Arbor, MI and manufactures the only US Army authorized Operator Driving Simulator. Funding in FY2010 for this project will maintain a production line for this requirement, and perhaps increase employment at this small business.

Item Name: Advanced Tactical Laser Flashlight Devices
Request: 1,800,000
Account: RDA-Research & Development Army
Line: 6
PE: 0602120A
Suggested Recipient: Electro Optics Manufacturing, Inc.
Suggested Location of Performance (major portion of the work): Wyandotte, MI
Purpose/Project Description: This project will finish development of advanced packaging, heat-sinking, rangefinder & wavelength engineering technologies to deliver the smallest, most powerful, eye-safe multi-color Advanced Tactical Laser Flashlight Devices for military scenarios requiring non-lethal incapacitation. The devices have the potential to save numerous US and civilian lives and are particularly effective in combat, checkpoint and personal protection situations. This program focuses on development and inclusion of a miniature rangefinder to control eye-safety, size reduction and production of white light for additional functionality in order to provide a U.S. Military-ready product.

Item Name: Base Security System
Request: 2,000,000
Account: APA-Aircraft Procurement Army
Line: 33
PE: 0603005A
Suggested Recipient: Lowry Computer Products, Inc.
Suggested Location of Performance (major portion of the work): Brighton, MI
Purpose/Project Description: The extension of Base Security System will allow the Michigan National Guard to better carry out its mission of protecting the people and infrastructure of the State of Michigan. Once this system is proven in the State of Michigan, it will be offered for sale to other Guard units and commercial companies. This project will have a direct impact on employment at a Michigan based company.

Item Name: Model Based Management Decision Tools for Ground Vehicles
Request: 4,500,000

Account: RDN-Research & Development Navy
Line: 53
PE: 0603635M
Suggested Recipient: Ricardo, Incorporated
Suggested Location of Performance (major portion of the work): Belleville, MI
Purpose/Project Description: This funding will provide the government and industry with computer management decision tools to optimize vehicle development performance. These tools enable the true computer-based development of prognostics that will enable prediction of mission success. The output of this modeling will provide real time management decision tools that identify optimum specifications to develop lower-cost vehicle systems that meet the operational and logistics requirements of the Marine Corps and Department of Defense.

Item Name: Electrohdydrodynamic Wind Energy for Military Applications
Request: 1,100,000
Account: RDA-Research & Development Army
Line: 2
PE: 0602601A
Suggested Recipient: Accio Energy, Inc.
Suggested Location of Performance (major portion of the work): Ann Arbor, MI
Purpose/Project Description: The project involves research and prototype product development of a non-turbine wind energy technology for rapid deployment and mobile grid applications. System efficiency will be demonstrated and an alphas scale prototype will be produced for testing. This project optimizes use of tax dollars by creating a new wind energy technology and product with many benefits to the nation as a whole. It will create jobs, increase the acceptability of wind energy for distributed power generation, thus lowering use of fossil fuels, support greater energy independence, and help in addressing climate change. Because this technology is unique, it will create an opportunity to increase the nation's exports.

Item Name: Development of Silicon Carbide Supply Chain for Ground Vehicle Power Systems
Request: 4,500,000
Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: Dow Corning Corporation
Suggested Location of Performance (major portion of the work): Midland, MI
Purpose/Project Description: To establish a plurality of domestic technology options and sources for Silicon Carbide (SiC) based power inverters to provide affordable, reliable drive system technology for hybrid electric ground vehicles. This project will establish for the first time a domestic SiC power electronics supply base to respond to the critical Army need for hybrid electric vehicles. A mature supply chain will foster supplier competition to lower unit costs to the Army and accelerate transition of high efficiency SiC inverters into commercial hybrid electric vehicles. Investment now will keep SiC power electronics manufacturing and associated high quality jobs in the U.S.

Item Name: GEI-MX5 JP8 5kW High-Temperature PEM Fuel Cell APU
Request: 5,000,000
Account: RDDW-Research & Development Defense Wide
Line: 42
PE: 0603712S
Suggested Recipient: Global Energy Innovations
Suggested Location of Performance (major portion of the work): Flint, MI
Purpose/Project Description: Fuel cell APU's that use military logistic fuels, JP-8, will improve overall battlefield fuel economy by allowing vehicles to avoid engine idling during extended waiting periods. Anticipated fuel savings are 20% and support on-board electric power needs. This project creates high-tech green jobs in Michigan by increasing fuel cell manufacturing capacity to support both the military and consumer markets. Clean power with flexible fuels also promote energy independence and reduce greenhouse gas. It also is perfect for residential homes as a combined heat and power system with very high system efficiencies and will help truckers avoid fuel costs associated with idling.

Item Name: Enabeling Condition Based Maintenance Using Model Based Prognostics for Ground Vehicles
Request: 4,500,000
Account: RDA-Research & Development Army
Line: 13
PE: 0602601A
Suggested Recipient: Ricardo, Incorporated
Suggested Location of Performance (major portion of the work): Belleville, MI
Purpose/Project Description: The purpose of this project is to continue development of a new approach to conditioned based maintenance that will be less costly and more efficient than previous unsuccessful attempts to bring this capability and its maintenance savings to the Department of Defense. This project will contribute to the preservation and continued development of the displaced technical workforce which resides in South Eastern Michigan. It accelerates the transformation of the region into a more diverse area by adding additional skills to support the Department of Defense and Tank-automotive and Armaments Command in Warren, Michigan.

Item Name: Advanced Powertrain Components for Military Vehicles
Request: 5,100,000
Account: RDA-Research & Development Army
Line: 32
PE: 0603004A
Suggested Recipient: MAG Industrial Automation Systems LLC
Suggested Location of Performance (major portion of the work): Port Huron, MI
Purpose/Project Description: Contractors are aggressively searching for innovative manufacturing processes to improve the performance of powertrains and engines to impact the

energy efficiency of weapons systems. In addition, lighter-weight munition components and vehicle components are being evaluated by the Army. The challenge of meeting these objectives are based on the lack of manufacturing technology. However, engineering communities agree that advances must be made to non-traditional processing techniques. This project will create advanced manufacturing technologies that will create jobs in Port Huron Michigan.

Item Name: Advanced Digital Hydraulic Hybrid Drive System
Request: 4,000,000
Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: Eaton Corporation
Suggested Location of Performance (major portion of the work): Southfield, MI
Purpose/Project Description: This project will demonstrate a retrofitable, military-purpose series hybrid hydraulic system on a High Mobility Multipurpose Wheeled Vehicle (HMMWV). This will create immediate military value by providing 60% fuel economy improvements over a base HMMWV and reduce the hybrid system weight and volume by 50%. Significant US-based job creation and energy independence will result. For this program, Eaton has increased engineering and marketing teams from 12 to 35 US-based employees from Jan to Dec 2008. Funding for this program may create 8-10 engineering jobs.

Item Name: Next Generation Superchargers for Increasing the Power and Performance of Military Engines
Request: 4,000,000
Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: Eaton Automotive
Suggested Location of Performance (major portion of the work): Marshall, MI
Purpose/Project Description: The program will address technical risks for development and insertion of high pressure ratio superchargers on military vehicles. The final deliverable will be a military-vehicle specific high-pressure ratio supercharger. This program will create economic benefits to the state, with new auto-markets on the order of hundreds of millions of dollars, accompanied by job creation. The technology can also increase fuel economy and decrease harmful emissions. Job creation will occur in both Michigan (advanced engineering, sales and marketing) and in Athens, Georgia (supercharger manufacturing). This development program is envisioned to sustain or create 12 jobs in MI.

Item Name: Highly Integrated Optical Interconnect for Military Avionics
Request: 4,000,000
Account: RDN-Research & Development Navy
Line: 62
PE: 0603739N

Suggested Recipient: Calumet Electronics Corporation
Suggested Location of Performance (major portion of the work): Calumet, MI
Purpose/Project Description: Develop materials and manufacturing processes to produce optical circuit board connections in a U.S. commercial board facility. F/A-18G, P-8Y, and Joint-Strike Fighter require next generation optical interconnect technology with high integration for data processing. Investment in optical interconnect materials and manufacturing technology will satisfy a valid critical military need for tightly integrated optical fiber solutions for Department for Defense weapon systems. In addition, it will create a technological advantage for the struggling domestic printed circuit board industry, which is experiencing tremendous pressure to move off-shore to remain competitive.

Item Name: Re-Engineering for Depots and the Supply Chain (REDS)
Request: 5,000,000
Account: RDA-Research & Development Army
Line: 42
PE: 0603712S
Suggested Recipient: Onodi Tool & Engineering Co.
Suggested Location of Performance (major portion of the work): Melvindale, MI
Purpose/Project Description: The Re-Engineering for Depots and the Supply Chain will develop a systematic lean six sigma process demonstrating a re-engineering and agile manufacturing program that leads to the cost effective aquisition of problematic or obsolete hard metal parts. Depots and Supply programs are put in jeopardy when out of production or obsolete hard metal parts can not be obtained.

Item Name: Domestic Production of Transparent Polycrystalline Laser Materials
Request: 7,000,000
Account: APA-Aircraft Procurement Army
Line: 1
PE: N/A
Suggested Recipient: Nanocerox Inc.
Suggested Location of Performance (major portion of the work): Ann Arbor, MI
Purpose/Project Description: This new class of polycrystalline laser gain materials is formed through a ceramic process using precisely-refined highly uniform nano-particles. The project would create a pilot production facility in Ann Arbor. A developing optoceramic industry in Michigan will have a positive impact on the State. Department of Defense funding along with the Michigan Economic Development Coporation, individual investors, and venture capitalists are fostering the growth of a whole new industry for Michigan. The Title III Program will help Nanocerox and its partners grow, expand facilities, and hire well qualified scientist and engineers from southeast Michigan. In turn, graduates from Michigan universities will have opportunities in Michigan.

Item Name: Demonstrating Next Generation Diesel Engines for Ground Vehicles
Request: 6,000,000

Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: Ricardo, Incorporated
Suggested Location of Performance (major portion of the work): Belleville, MI
Purpose/Project Description: Protective armor adds substantial weight requiring more power to maintain vehicle performance. Additional power is needed to support new electronics while fuel use must be reduced. A solution is to develop more powerful and more fuel efficient engines. The development of a more powerful and fuel efficient military engine family addresses the national agendas of energy conservation and CO_2 reduction. It will create 20-40 high paying engineering jobs and cost savings. An additional benefit is the safety improvement for soldiers. Fewer fuel fillings in the battlefield reduces the transport of fuel to the front lines reducing the number of possible attacks on these tankers.

Item Name: Development of Strap-On Autonomy for Legacy Tactical and Convoy Vehicles
Request: 3,000,000
Account: RDA-Research & Development Army
Line: 34
PE: 0603005A
Suggested Recipient: iRobot Corporation
Suggested Location of Performance (major portion of the work): Troy, MI
Purpose/Project Description: iRobot has developed an Intelligent Vehicle Robotic Kit, which can be adapted to any legacy tactical or convoy vehicle in order to add autonomous capability. Additional development is needed to enable these capabilities at convoy speeds. This project will utilize the existing fleet to make them optionally unmanned. Given that vehicle autonomy is a necessity for today's military, the alternative is building entire new fleet of unmanned vehicles, at a significantly larger cost. By retrofitting existing vehicles, iRobot will save lives and save the government money in the process.

Item Name: Robotics Vehicle Secure Communications
Request: 5,000,000
Account: RDA-Research & Development Army
Line: 34
PE: 0603005A
Suggested Recipient: Pilgrim Technology, LLC
Suggested Location of Performance (major portion of the work): Midland, MI
Purpose/Project Description: This project will address radio frequency security and transmission issues faced when communicating from small spaces made of brick, mud, packed materials, wood, water latent wood, bodies of water, and other manmade objects of composite materials. This project will also improve radio technology used in emergency stop protocols, video, two-way voice, robotic controls, and sensor controls. This project will create jobs and stimulate the economy throughout the lifetime of the program. This project will further advance technology which is used to protect the citizens and soldiers.

Item Name: Magneto-Rheological (MR) Suspensions for Tactical Wheeled Vehicles
Request: 3,000,000
Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: LORD Corporation
Suggested Location of Performance (major portion of the work): Wixom, MI 48393
Purpose/Project Description: Provides RDT&E funds to retrofit army vehicles with LORD MR Suspensions. MR suspensions significantly reduce absorbed energy (~50%) and peak dynamic loads (~60%) into the vehicle, and control vehicle pitch and roll motions (~30%), with little vehicle modification. This project assesses a variety of enabling technologies in the areas of hybrid electric propulsion, mobility, thermal management, intelligent systems, vehicle diagnostics, fuels/lubricants, and water purification.

Item Name: Total Perimeter Surveillance
Request: 2,000,000
Account: RDDW-Research & Development Defense Wide
Line: 33
PE: 0603384BP
Suggested Recipient: Dexter Research Center, Inc.
Suggested Location of Performance (major portion of the work): Dexter, MI
Purpose/Project Description: There are over 200 key Department of Defense facilities in the US which currently lack perimeter monitoring capabilities for the presence of chemical and biological weapons. This project will use fourier-transform infrared radiometry array using unattended passive infrared sensors for Total Perimeter Coverage. The creation of stable, high tech jobs is vital to our future. This project funding for the Department of Defense system is targeted for commercialization and will stimulate the job market & suppliers. In addition, public safety and first responders require a reliable and inexpensive system that can quickly analyze unknown compounds. Recent challenges include contamination found in peanut butter, multiple invasive species in the Great Lakes, unrestrained emissions of unknown pollutants, and poor indoor air quality.

Item Name: Center for Genetic Origins of Cancer
Request: 5,800,000
Account: RDA-Research & Development Army
Line: 30
PE: 0603002A
Suggested Recipient: University of Michigan Comprehensive Cancer Center
Suggested Location of Performance (major portion of the work): Ann Arbor, MI
Purpose/Project Description: This project would participate in the nationally preeminent U.S. Department of Defense advanced medical research program to accelerate discovery of molecular signatures for cancers and rapidly develop new personalized drugs to more effectively treat

cancer patients in Michigan. Cancer continues to strike 1 in 3 Americans and it kills 1 in 4. That averages out to 1,500 deaths every day, at an annual cost to the nation of $210 billion and climbing. Cancer is expected to become the nation's biggest killer within a decade, surpassing heart disease. Since 2005 the FDA has approved 18 new cancer drugs, many of them breakthrough products. But the pipeline contains hundreds more that will never get to patients because corporate developers aren't able, or willing, to come up with the money, time and patients necessary to establish acceptable data. Successfully ushering any one of the new cancer drugs through the necessary development states will take up to 15 years and typically cost more than $1 billion, about $200 million more than is spent winning approval for drugs.

Item Name: Protective 3-D Armor Structures to Safeguard Military Vehicles and Troops
Request: 2,000,000
Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: Lawrence Technological University
Suggested Location of Performance (major portion of the work): Southfield, MI
Purpose/Project Description: This project will develop 3-D armor that is superior to resisting serious threats. Prototypes will be created for small-scale ballistic and durability testing by Tank-Automotive Research, Development and Engineering Center, Army Research Laboratory and others. This project will also establish a baseline for large-scale prototypes, armor testing, and manufacturing readiness. This will also help US Army survivability and armor objectives that help save American lives. This project will also attract business opportunities, create and retain jobs, and secure funding for Michigan.

Item Name: Cleaning Technologies for Composite and Light Metal Component RESET
Request: 2,100,000
Account: RDA-Research & Development Army
Line: 33
PE: 0600035A
Suggested Recipient: Kolene Corporation
Suggested Location of Performance (major portion of the work): Detroit, MI
Purpose/Project Description: This project will provide necessary funding for the research and development of cleaning technologies required for processing composite and light metal components during maintenance operations. This project will help to create jobs in a distressed area. It will help improve the efficiency at the depot level and reduce lead times for re-supplying Department of Defense equipment. The goal is to produce an environmentally friendly alternative to current cleaning techniques.

Item Name: Mobile System to Produce Fuels and Potable Water from Waste
Request: 3,200,000

Account: RDA-Research & Development Army
Line: 33
PE: 060035A
Suggested Recipient: Carew Energy & Water, Inc.
Suggested Location of Performance (major portion of the work): Grand Blanc, MI
Purpose/Project Description: The purpose of this request is to develop a vehicle mounted system to produce usable fuels and generate potable water from waste for the military. The system will process both human waste and carbon based solid waste and produce a fuel with properties that are very similar to diesel that can be utilized in military equipment and vehicles. The residual water will be suitable to go into a reverse osmosis system for consumption. The Mobile System to Produce Fuels and Potable Water from Waste will provide valuable and renewable resources for the military, support the environment and reduce our nation's dependence on foreign oil.

Item Name: Rapid Virtual Prototyping for Thermal Analysis of Electronics/Electrical Systems involved in Hybrid Technology
Request: 3,000,000
Account: APA-Aircraft Procurement Army
Line: 33
PE: PE 0603005A
Suggested Recipient: TES International LLC
Suggested Location of Performance (major portion of the work): Troy, MI
Purpose/Project Description: Incorporate critical elements for the thermal modeling of Electric and/or Hybrid Automotive powertrain components as part of a total vehicle thermal model into the software developed under phase II Small Business Innovation Research contract. This project will provide work for roughly 30 people. Improving the reliability and efficiency of hybrid vehicles will increase the efficiency of our military and reduce our dependence on foreign oil.

Item Name: No Idle System/Dual Use Military & Commercial
Request: 2,500,000
Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: Prestolite Electric Incorporated
Suggested Location of Performance (major portion of the work): Plymouth, MI
Purpose/Project Description: The military has an urgent need for a No Idle System to save battlefield fuel and allow for hours of silent over-watch. Additionally, the commercial truck fleet will be able to comply with present state laws and anticipated pending federal legislation that will limit trucks idling time for five minutes or less. This funding will increase employment at our R&D facility with the addition of three to four highly skilled technical positions, address the urgent need to save significant amounts of fuel in military and commercial vehicles by eliminating idle times to meet federal standards for commercial trucks.

Item Name: Advanced Modeling Technology for Large Structure Titanium Machining Initiative
Request: 4,000,000
Account: RDA-Research & Development Army
Line: N/A
PE: 0708045A
Suggested Recipient: Third Wave Systems
Suggested Location of Performance (major portion of the work): Canton, MI
Purpose/Project Description: Develop modeling software for machining of titanium. The Army can expect a 20% cost reduction of titanium parts, 50% reduction of titanium machining time, and faster parts delivery. Technology already successfully demonstrated on F-35 Joint Striker Fighter airframe parts. Third Wave's advanced modeling machining software allows the Army to produce critical vehicle components that are stronger and that can be made both faster and cheaper. Third Wave offers green solutions by eliminating the need for machining processes which use toxic chemicals that are environmentally unfriendly. Third Wave's software applications have already been proven and successfully implemented in the F-35 and V-22 programs where the costs of many components were reduced by 20% or more.

Item Name: Advanced Composite Materials Research for Land, Marine, and Air Vehicles
Request: 7,000,000
Account: RDA-Research & Development Army
Line: 13
PE: 0602010A
Suggested Recipient: Michigan State University
Suggested Location of Performance (major portion of the work): East Lansing, MI
Purpose/Project Description: This broadly based ongoing program of basic research on composite materials and structure will support the U.S. military in the design, production, inspection, and repair of safe, durable, light-weight and energy-efficient vehicles in severe environments. This project will contribute to the recovery of the automotive industry in Michigan, and expand the industrial base of Michigan and the nation. This project will also contribute to energy efficiency through the manufacturing of light-weight durable military and civilian vehicles.

Item Name: Next Generation Casting Initiative
Request: 5,000,000
Account: RDAF-Research & Development Air Force
Line: 29
PE: 0603680F
Suggested Recipient: Alcoa Howmet
Suggested Location of Performance (major portion of the work): Whitehall, MI
Purpose/Project Description: Next Generation Casting Initiative will support the development of innovative, cost-effective manufacturing technologies for use by the aerospace casting industry for critical defense programs. To retain and create high paying manufacturing jobs in

Michigan, we need to implement new cutting edge technologies and manufacturing techniques. This funding will speed up that implementation and retain and create high paying manufacturing jobs in Michigan.

Item Name: Advanced Lithium Iron Phosphate Battery System for Army Combat Hybrid HMMWV and Other Army Vehicle Platforms
Request: 3,000,000
Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: A123Systems
Suggested Location of Performance (major portion of the work): Ann Arbor, MI
Purpose/Project Description: The Small Business Innovation Research program developed nanophosphate electrodes that will be used to develop prismatic cells and battery packs for Army vehicles, addressing higher power and energy including silent watch & mobility, exportable power, longer life, improved safety and reduced fuel use. This project develops batteries that can be produced domestically, which serves as an anchor that will attract a supplier base and the development of new applications. This plant is expected to create up to 360 new jobs by 2012.

Item Name: Magnesium Composite Armor
Request: 2,153,000
Account: RDA-Research & Development Army
Line: 5
PE: 0602105A
Suggested Recipient: REL, Inc
Suggested Location of Performance (major portion of the work): Calumet, MI
Purpose/Project Description: The Magnesium Composite Armor project provides advanced magnesium composite armor for legacy vehicles and future combat systems to the military with substantial weight savings. This project will create jobs in Michigan using patented technology ensuring that jobs are kept in the US.

Item Name: VSIL: Armored Vehicle Components and Systems Simulated In Cost-Effective Virtual Design and Test Environment
Request: 5,000,000
Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: Cybernet Systems Corporation
Suggested Location of Performance (major portion of the work): Ann Arbor, MI
Purpose/Project Description: VSIL performs evaluations and trade studies on competing system designs, performs requirements analysis, and validates system modifications and designs both early in the procurement process and later during enhancements to produce better vehicle systems. The platform developed through this VSIL effort will allow Army engineers to develop

safer and more effective ground vehicles for our war fighters. VSIL will allow such developments to occur at a lower cost and at a more rapid pace to better respond to the rapidly changing threats presented by our adversaries. Finally, VSIL will be used to help reduce the Department of Defense's dependence on fossil fuels by supporting advanced trade off analysis of hybrid power technologies for use in military ground vehicles.

Item Name: Versatile Laser Protection Material
Request: 2,000,000
Account: RDA-Research & Development Army
Line: E01
PE: 62786
Suggested Recipient: Oxazogen, Inc.
Suggested Location of Performance (major portion of the work): Midland, MI
Purpose/Project Description: This project will develop and commercialize an eye protection system based on a solid state, broadband laser blocking coating that can be easily applied to various substrates that will benefit the U.S. military, civil law enforcement, and medical sectors. The successful commercialization of these highly complex coating systems will lead to significant growth for Oxazogen.

Item Name: Advanced Water Safety Analysis for Deployed Operations
Request: 2,500,0000
Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: Translume
Suggested Location of Performance (major portion of the work): Ann Arbor, MI
Purpose/Project Description: Translume's lightweight, portable water particle analyzer would provide clean water solutions for soldiers during wartime. Translume will add high-quality engineering, research and manufacturing jobs to the Michigan economy. The company is now evolving this base technology into a line of revolutionary products and services for defense, aerospace, biomedical, automotive, homeland security and other applications. This project will add to Michigan's advanced technology industry, generating high-paying, high-multiplier research and development jobs and acting as a magnet for other emerging technology companies.

Item Name: Mid Infrared Super-Continuum Laser for Light Aircraft Missile Defense
Request: 2,400,000
Account: RDA-Research & Development Army
Line: DK16
PE: 0603270A
Suggested Recipient: Omni Sciences, Inc.
Suggested Location of Performance (major portion of the work): Ann Arbor, MI
Purpose/Project Description: This project accelerates development of a high-performance, low-cost, low-maintenance laser source that forms the core of direct infrared counter-measure systems. This project can be justified both in terms of human impact and financial impact. In

human terms, the project will enable heat-seeking missile defense systems for light aircraft, saving both the lives of the crews as well as aircraft. In addition to saving the aircraft, Omni estimates this laser system will be 10 times cheaper than current laser systems. Expanding this product into healthcare, 30+ professional and skilled technical jobs could be created.

Item Name: Cold Weather Layering System (CWLS)
Request: 5,000,000
Account: OMMC-Operation and Maintenance Marine Corps
Line: BA:01
PE: N/A
Suggested Recipient: Peckham Industries
Suggested Location of Performance (major portion of the work): Lansing, MI
Purpose/Project Description: The Polartec components of the Cold Weather Layering Systems (CWLS) consist of a Polartec Power Dry Silkweight next-to-skin layer, a Polartec Power Dry Grid insulating layer with a high warmth-to-weight ratio, and a Polartec Wind Pro insulating layer with wind blocking capabilities in Marine Pattern print. The high warmth-to-weight ratio, anti-microbial, 4-way stretch, wind and water resistant characteristics of the components provide total performance to U.S. Marines in mountain and cold weather environments. Peckham Industries employs more than 1,800 disabled persons in highly sought after jobs, and employs up to 6,500 during peak times of the year. The manufacturing of CWLS for the U.S. Marine Corps is a significant source of work for this community.

Item Name: Long Range Supersonic Missile Engine for High Speed Strike
Request: 15,000,000
Account: RDDW-Research & Development Defense Wide
Line: 21
PE: PE0603216F
Suggested Recipient: Williams International Co., LLC
Suggested Location of Performance (major portion of the work): Commerce Township, MI
Purpose/Project Description: The proposed funding will be applied to the USAF/DARPA High Speed Turbine Engine Demonstrator project under the Versatile Affordable Advanced Turbine Engine program. The added funds will cover testing of a supersonic missile engine for high speed strike. This project will maintain ~100 high quality jobs in Michigan in FY2010. The proposed work is needed to ensure that propulsion technology will be available to support supersonic missile development programs beginning in FY2013.

Item Name: Damage and Corrosion Prognostics for Advanced Sustainability
Request: 2,500,000
Account: RDA-Research & Development Army
Line: 5
PE: 0602105A
Suggested Recipient: Eaton Corporation
Suggested Location of Performance (major portion of the work): Southfield, MI

Purpose/Project Description: The program will utilize embedded, non-destructive detection that can be coupled with a wide variety of materials and structures to detect costly and hazardous flaws from corrosion and wear. It alerts the soldier when an imminent and dangerous situation exists. The technology developed can create a differentiation for both Defense applications and commercial applications. Specifically, Eaton's Automotive and Truck groups in Michigan develop systems that are subject to environmental conditions that necessitate wear/corrosion protection and sensing. For that reason, Eaton spends millions of dollars a year in this area and can use that capability to work with the DoD to develop a superior product.

Item Name: Multi-Climate Protection System (MCPS)
Request: 8,000,000
Account: OPN-Other Procurement Navy
Line: 97
PE: N/A
Suggested Recipient: Peckham Industires
Suggested Location of Performance (major portion of the work): Lansing, MI
Purpose/Project Description: The purpose of this project is to procure 8000 sets of the Polartec components of the Multi-Climate Protection System (MCPS) to improve the comfort and safety of deployed Naval aviators. Peckham, through its military apparel production, offers manufacturing job opportunities to Michigan's disabled and those with significant barriers to employment. Peckham Industries employs more than 1,800 disabled persons in highly sought after jobs, and employs up to 6,500 during peak times of the year. The manufacturing of the Multi Climate Protection System for U.S. Navy aircrews is a significant source of work for this community.

Item Name: Unmanned Robotic System Utilizing a Hydrocarbon Fueled Solid Oxide Fuel Cell System
Request: 6,000,000
Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: Adaptive Materials, Inc.
Suggested Location of Performance (major portion of the work): Ann Arbor, MI
Purpose/Project Description: The purpose of this effort is to bring the hydrocarbon solid oxide fuel cell system closer to readiness. Also, a low rate initial production of fuel cell systems will enable military exercises with the technology. Previous use of earmark's allowed AMI to bridge a critical gap that helped deliver fuel cells to the field. The company used government funding and partnerships to build its portable power program for the U.S. military, and then leveraged the program, once established, to attract additional funding to support AMI work long-term.

Item Name: Tomahawk Cost Reduction Initiative
Request: 7,600,000
Account: RDN-Research & Development Navy

Line: 173
PE: 0204229N
Suggested Recipient: Williams International
Suggested Location of Performance (major portion of the work): Commerce Township, MI
Purpose/Project Description: This project will improve the F415 Tomahawk Cruise Missile engine to maintain an affordable and highly reliable engine system. Not only does this project provide highly valued technical jobs in Walled Lake, Michigan and Ogden, Utah but assures an affordable Tomahawk Cruise Missile System.

Item Name: Hydraulic Hybrid Vehicles (HHV) for the Tactical Wheeled Fleet
Request: 3,500,000
Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: Bosch Rexroth Corporation
Suggested Location of Performance (major portion of the work): Rochester Hills, MI
Purpose/Project Description: To address the needs of the U.S. Military's tactical wheeled fleets of significantly reduced fuel consumption and improved vehicle performance and mobility, Bosch Rexroth Corporation (Rexroth) is developing an advanced Hydraulic Hybrid Vehicle (HHV) technology for introduction into both military and commercial vehicle applications. This advanced vehicle technology is expected to improve fuel economy by up to 90% as compared to conventional drivetrain configuration. It will also reduce emissions by 63% as compared to conventional drivetrain configuration and vehicle maintenance and lifecycle costs due to reduction in brake and engine wear. Acceleration will also be improved. Funding for this project will bring an ongoing partnership with the National Automotive Center closer to completion and result in significant fuel efficiency improvements in military and commercial vehicle applications. A significant reduction in our national petroleum use should result.

Item Name: Physician Executables Guidelines System (PEGS)
Request: 2,500,000
Account: RDA-Research & Development Army
Line: 30
PE: 0603002A
Suggested Recipient: Henry Ford Health System
Suggested Location of Performance (major portion of the work): Detroit, MI
Purpose/Project Description: This project will develop technology that allows the integration of clinical practice guidelines into any electronic medical record without the need to program or reprogram the record. This project will lead to the development of a device that will save every institution using an electronic medical record a great deal of time and money, including DoD and the VA. Ultimately, this will lead to lower health care costs, saving taxpayer dollars, and allow institutional funding to be used on direct patient care.

Item Name: HIPER (Highly Integrated Production for Expediting RESET)

Request: 8,200,000
Account: RDA-Research & Development Army
Line: 17
PE: 0602624A
Suggested Recipient: NVision
Suggested Location of Performance (major portion of the work): Wixom, MI
Purpose/Project Description: The requested funding will enable the utilization of 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. This project will induce many benefits for the Wixom community and the nation as a whole. Most importantly HIPER will implement a program that ensures the quickest and most efficient way to get the best and safest weaponry to the warfighter. In striving to acheive this goal, funding of HIPER will maintain the employment of Wixom residents and employ the skills of small & medium size businesses, thus creating additional employment opportunities where there were none before.

Item Name: High Capacity Nickel-Metal Hydride Battery Development
Request: 3,700,000
Account: RDA-Research & Development Army
Line: 3
PE: 0603005A
Suggested Recipient: Energy Conversion Devices, Inc.
Suggested Location of Performance (major portion of the work): Rochester Hills, MI
Purpose/Project Description: This proposed program is to support the development of next-generation nickel-metal hydride (NiMH) batteries for hybrid electric vehicle (HEV) and plug-in hybrid electric vehicle (PHEV) applications and stationary power applications. The development is designed to deliver higher energy and power in one design improving battery and vehicle performance while reducing cost. Furthermore, it decreases U.S. oil and gasoline consumption thereby helping eliminate dependence on foreign oil.

Item Name: Army Force Generation Synchronization Tool
Request: 5,000,000
Account: OMA-Operation and Maintenance Army
Line: N/A
PE: 01 2020A 113
Suggested Recipient: ProModel Corporation
Suggested Location of Performance (major portion of the work): Ann Arbor, MI
Purpose/Project Description: This project will assist the Army's pressing need to enhance its capability to develop more precise predictive estimates of people, equipment and training. With limited deployment of the current software, U.S. Army Forces Command has already seen the benefit and return on investment from the technology by reducing hundreds of man-hours in producing key products for decision makers and enabling more rapid, and higher quality response to proposed scenarios. By enabling such rapid response, far less staff manpower is required to make decisions. Sustaining funding will also lead to the creation of 10 new jobs.

Item Name: Waste Water to Energy Program
Request: 3,900,000
Account: RDA-Research & Development Army
Line: 52
PE: 0603734A
Suggested Recipient: NextEnergy
Suggested Location of Performance (major portion of the work): Detroit, MI
Purpose/Project Description: The NextEnergy Center will work with the Army Construction Engineering Research Laboratory (CERL) as part of a multi-year effort to develop Waste Water to Energy (WW2E) technology in support of Department of Defense initiatives. The use of WW2E technologies will reduce the amount of fuel that must be shipped to support fixed and forward bases electrical power and reduce the logistics costs of managing waste while improving the environmental footprint of the Department of Defense. Less fuel is consumed because fewer generators are required, thereby reducing the number of fuel trucks and personnel exposed to security risks during delivery. These technologies will serve the needs of not only the U.S. military but civilian challenges.

Item Name: Smart Plug-In Hybrid Electric Vehicle Program
Request: 4,100,000
Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: NextEnergy
Suggested Location of Performance (major portion of the work): Detroit, MI
Purpose/Project Description: Funding will support continued development of new stationary and mobile charging and discharging infrastructure and technologies associated with smart Plug-In Hybrid Electric Vehicles (PHEV)with vehicle to grid (V2G) connectivity. The use of Smart PHEV's will result in better use of fuel consumed by idling on-site vehicles which could serve as electrical power generators when not being used for transportation. This project will aid in fostering energy independence, creating jobs and improving the economy.

Item Name: Software Assurance Education and Research Institute
Request: 1,800,000
Account: RDDW-Research & Development Defense Wide
Line: 184
PE: 0303140G
Suggested Recipient: University of Detroit Mercy
Suggested Location of Performance (major portion of the work): Detroit, MI
Purpose/Project Description: Funding requested in FY10 will be utilized to ensure that the teaching of secure software assurance, as developed by the Department of Homeland Security (DHS), is an integral and sustainable part of relevant programs in higher and secondary education. The DHS has documented a need to ensure secure practice in the development, acquisition and operation of software. The University of Detroit Mercy has been working on

integrating the recommendations of the Department of Homeland Security into existing higher education programs. Including secure software assurance techniques into existing academic curricula is a critical step in securing cyberspace.

Item Name: The Barbara Ann Karmanos Cancer Institute (KCI) National Oncogenomics & Molecular Imaging Center (NOMIC)
Request: 5,950,000
Account: RDA-Research & Development Army
Line: 30
PE: 0603002A
Suggested Recipient: Karmanos Cancer Institute
Suggested Location of Performance (major portion of the work): Detroit, MI
Purpose/Project Description: To develop technology to diagnose human cancer by defining oncogene signatures which characterize cancers in patients. The Barbara Ann Karmanos Cancer Institute (KCI) will provide imaging technology capable of greatly improving detection of genes that cause cancer and measure treatment response. With roughly 2,000 Michigan employees and volunteers, KCI has nearly 40,000 patients in the State, in addition to many throughout the country. Funding from the DoD to support year one of the research being conducted by NOMIC has already resulted in new jobs.

Item Name: Cancer Vaccine Development Center (CVDC)
Request: 3,085,000
Account: RDA-Research & Development Army
Line: 28
PE: 0602787A
Suggested Recipient: Karmanos Cancer Institute
Suggested Location of Performance (major portion of the work): Detroit, MI
Purpose/Project Description: The Karmanos Cancer Institute is requesting funding for its Cancer Vaccine Development Center to develop a human vaccine to prevent and treat cancer. Detroit, MI has been profoundly impacted by the economic recession, and this funding will allow for immediate increases in staff levels of the Cancer Vaccination Development Center. Each new job will have a multiplier effect on the city by increasing tax revenue; sustaining local businesses, and creating positive public opinion. Funding will immediately lead to the creation of 50-60 full-time, high-paying, highly-skilled jobs. It will also help protect the warfighter in theatre and post service.

Item Name: Fielding the Gladiator Armed Unmanned Ground Vehicle
Request: 9,000,000
Account: RDA-Research & Development Army
Line: 515
PE: 0603005A
Suggested Recipient: Esys Corporation
Suggested Location of Performance (major portion of the work): Auburn Hills, MI

Purpose/Project Description: Additional support is needed for transitioning to manufacturing partners, improvement of armament sensor turret, and the fielding plan for the Gladiator Unmanned Ground Vehicle. The Gladiator platform will save soldiers lives and support them in dangerous combat and support operations. The collaborative team effort will add and support more jobs in Michigan, many which specifically require automotive manufacturing expertise. Finally, when successful, the Gladiator robotic platform will be manufactured in Michigan using our automotive industrial base.

Item Name: Intensive Quenching for Advanced Weapon Systems (IQAWS)
Request: 2,000,000
Account: RDA-Research & Development Army
Line: 8
PE: 060221A
Suggested Recipient: IQ Technologies
Suggested Location of Performance (major portion of the work): Akron, OH 44311
Purpose/Project Description: This project would support an industry coalition to develop the technology of Intensive Quenching for hardening helicopter power transmission components as part of the Army's Rotorcraft Force Modernization Fleet effort for main gearbox power density transmissions. In 2007, IQ Technologies worked with project partners and the Watervliet Arsenal and the helicopter gear manufacturers to implement IQ Technologies' "green" intensive quenching processes for improving the performance of hardened steel components. They have gathered data and analysis of that data by the Benet Labs which demonstrates a 20% "super-strengthening" of small gun barrels, and cannon barrel sections made of U.S.- made steels, bettering the properties of the new, French-made, gun barrel steels. These findings are now being used to address the issue of hardened helicopter gears and components. Over 18 months of testing and data analysis at the Gear Research Institute at the University of Pennsylvania has been completed and used for applying this technology to U.S. defense helicopter engine components. In this initial period, there has been a minimum 14% increase in ultimate load carrying capabilities in helicopter transmission gears when compared to traditional oil quenched gears. This correlates directly to both greater payloads, as well as the ability to withstand combat damage and return the crew safely to the base of operations. The funding request will allow the technology to significantly increase the load carrying capabilities to meet the new requirements set forth for the department.

Item Name: NAVAIR Project for Land/Sea-Based Air Systems Maintenance and Air Worthiness (PLASMA)
Request: 3,000,000
Account: RDN-Research & Development Navy
Line: 16
PE: 603123
Suggested Recipient: Focus: Hope
Suggested Location of Performance (major portion of the work): Detroit, MI
Purpose/Project Description: Focus: HOPE's investigations of NAVAIR's needs indicate that additional technologies such as thermal/plasma spraying and physical/chemical vapor deposition

would be suitable for NAVAIR components, thereby removing several limitations of current processes. This program is based on Focus: HOPE's experience of moving over 200 minority manufacturing engineers and roughly 2,300 primarily minority machinists into the economic mainstream. This proram will encourage individuals to pursue science, technology, engineering and math (STEM) programs specifically targeted at the defense industry's impending needs.

Item Name: Standoff Explosives Detection System (SEDS)
Request: 2,000,000
Account: RDN-Research & Development Navy
Line: 5
PE: 0602123N
Suggested Recipient: BOSSdev, Inc.
Suggested Location of Performance (major portion of the work): Troy, MI
Purpose/Project Description: This funding will support a U.S. Navy research & development project to develop a mobile, vehicle-mounted, improvised explosive device (IED) detector that will be able to quickly and safely detect explosives in a buried IED from a standoff distance. The Standoff Explosives Detection System (SEDS) will save the lives of countless U.S. military personnel who are exposed to the danger of IEDs. It will also create up to 100 jobs in Michigan. There are also potential offshoots of the SEDS technology that could have important homeland security applications, such as scanning cargo containers at ports for nuclear devices. The SEDS program will be a valuable investment of taxpayer dollars.

Item Name: Advanced Material Technologies for Packaging Systems
Request: 4,000,000
Account: RDA-Research & Development Army
Line: N/A
PE: 633001-J52
Suggested Recipient: XG Sciences
Suggested Location of Performance (major portion of the work): East Lansing, MI
Purpose/Project Description: The program will result in lighter and less expensive ration packaging compared to current systems. The new packaging will provide protection against moisture and oxygen penetration as well as insect infestation, allowing the required three year shelf life. Ration waste will degrade in theater, resulting in reduced logistic requirements. Biodegradable waste also means the reduction of time & energy of the logistics to bring the packages back to the US. The successful funding of packaging will maintain the employment of East Lansing residents and engage the skills of small and medium size businesses thus, creating additional employment opportunities where there was none before.

Item Name: On-Demand Custom Body Implants/Prosthesis for Injured Personnel
Request: 3,000,000
Account: RDN-Research & Development Navy
Line: R-1:130
PE: 0604771N

Suggested Recipient: University of Michigan-Dearborn
Suggested Location of Performance (major portion of the work): Dearborn, MI
Purpose/Project Description: Develop a unique and state of the art planning, designing and manufacturing platform for custom implants/prosthesis, based on medical images and CAD data. The proposed manufacturing platform would reduce the lead time and produce better body parts. A primary goal of the Department of Defense's Operational Medicine Research Program is to develop strategies to assure and protect the health of military personnel. Manufacturing body implants and prosthesis on demand directly from CAD data as proposed here would reduce the lead time and improve the quality of life of our veterans. Most of the requested funds will be used to employ students, who would contribute to the skilled work force of the state and diversify the industry base.

Item Name: Autonomous Superconducting Fault Current Limiting Systems for the Navy
Request: 4,000,000
Account: RDN-Research & Development Navy
Line: 5
PE: 0602123N
Suggested Recipient: Nove Technologies Inc.
Suggested Location of Performance (major portion of the work): Metamora, MI
Purpose/Project Description: Nove seeks to develop a High Temperature Superconductor-Superconductor/Metal Matrix Composite Fault Current Limiter (FCL) that can effectively meet the needs of the DDG-1000 Destroyer and enable the integration of the shipboard propulsion/distribution power system. This project supports the development of US advanced technology businesses and creates manufacturing, engineering and administrative jobs in Michigan. The manufacturing of FCLs produces no toxic substances and is not dependent on foreign sources of materials or technology. Developing the Naval FCL also supports the creation of similar commercial devices that can be used to improve the efficiency and stability of the US electric utility grid.

Item Name: Next Generation Holographic Weapon Sight
Request: 4,000,000
Account: RDDW-Research & Development Defense Wide
Line: 232
PE: 1160404BB
Suggested Recipient: L-3 EO Tech Inc
Suggested Location of Performance (major portion of the work): Ann Arbor, MI
Purpose/Project Description: This project advances the current holographic reticle by simplifing it to a single dot with the three hash marks to increase targeting speed and display size. Renewable power technology will reduce weight by eliminating batteries for weapon sights. This new technology responds to the warfighter's request for the capability. It will lead to a new production line in Ann Arbor which will create new jobs and the new technolgy for producing electrical current. With the new discovery, materials can lead to additional energy efficiency in many other applications.

Item Name: R350 Heavy Fuel Engine Family for Unmanned Systems
Request: 4,000,000
Account: RDA-Research & Development Army
Line: 31
PE: 63003
Suggested Recipient: L-3 Communications Combat Propulsion Systems
Suggested Location of Performance (major portion of the work): Muskegon, MI
Purpose/Project Description: To continue the development, installation, and testing of fuel efficient and higher power density heavy-fuel engines to meet the Department of Defense requirements for unmanned aerial vehicle engines to operate on jet fuel. The project will create manufacturing jobs in economically deprived West Michigan. The project will also make our warfighters safer by providing them with better performance, and surveillance.

Item Name: Ultrasonic Consolidation for Smart Armor Applications
Request: 3,900,000
Account: RDN-Research & Development Navy
Line: 181
PE: 0206623M
Suggested Recipient: Solidica, Inc.
Suggested Location of Performance (major portion of the work): Ann Arbor, MI
Purpose/Project Description: Solidica will develop a new type of armor for ground combat vehicles that is lighter and cheaper than titanium. The process is used to join alternating layers of aluminum and titanium creating a product used as an excellent blast armor solution. This project will result in lower costs for the defense department's ground vehicle armor purchases. In Michigan's struggling economy this allows for a novel technology to be brought into production stimulating the economy. Solidica anticipates adding hundreds of jobs to support production of this product.

Item Name: Army Manufacturing Technical Assistance Production Program
Request: 2,500,000
Account: OMA-Operation and Maintenance Army
Line: 20
PE: 213045
Suggested Recipient: Army TACOM Industrial Base Operations
Suggested Location of Performance (major portion of the work): Warren, MI
Purpose/Project Description: The Manufacturing Technical Assistance Production Program assists with increasing the capabilities of small businesses in support of Army missions. Tank-automotive and Armaments Command (TACOM) will provide technical assistance to potential small businesses to develop and expand their capabilities and increase program supportability. This project creates and sustains jobs with small businesses servicing the defense sector. It ensures that the war fighter and weapons systems get what parts are needed in a timely manner

with zero quality issues. The tax payer gets benefits with sustained economic growth and support to the warfighter and weapons systems.

Item Name: High Power Density 2-Stroke Engine Family
Request: 4,500,000
Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: FEV, Inc.
Suggested Location of Performance (major portion of the work): Auburn Hills, MI
Purpose/Project Description: This project will design a family of engines using two crankshafts and as many conventional components (i.e., same as or similar to components used successfully today in production) as possible. The project is consistent with the Department of Defense's initiative to develop power generation which is more fuel efficient, hence reducing dependency on foreign oil and also helping to address the high cost and logistical complications of providing high volumes of fuel to the battlefield. Secondly, developing power generation which is both lighter and more powerful results in the ability to equip already overweight tactical vehicles with additional heavy armor and electronics, while still maintaining the required level of vehicle performance to help ensure soldier safety.

Item Name: R500 Heavy Fuel Engine series for Unmanned Ground Vehicles
Request: 4,000,000
Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: L-3 Communications Combat Propulsion Systems
Suggested Location of Performance (major portion of the work): Muskegon, MI
Purpose/Project Description: This project will develop, install, and test fuel efficient and higher power density heavy-fuel engine with particular emphasis on powering the current Tank Automotive Research, Development and Engineering Center Unmanned Ground Vehicle (UGV) Tactical Amphibious Ground Support (TAGS) Systems platform. When the engines go into production, they will create new manufacturing jobs in an economically deprived area of Michigan. The engines will improve the performance of unmanned ground vehicles thus helping them meet mission objectives, and reduce the number of soldiers put at risk.

Item Name: Military Mental Health Initiative
Request: 7,500,000
Account: RDA-Research & Development Army
Line: N/A
PE: N/A
Suggested Recipient: Wayne County
Suggested Location of Performance (major portion of the work): Detroit, MI

Purpose/Project Description: The partnership program would ensure that returning soldiers and their families have information about community mental health resources and can readily access the services.

Item Name: Sonic Infrared Imaging (Sonic IR) Technology Development
Request: 2,000,000
Account: RDAF-Research & Development Air Force
Line: 18
PE: 0603112F
Suggested Recipient: Wayne State University
Suggested Location of Performance (major portion of the work): Detroit, MI
Purpose/Project Description: Sonic IR is a new, nondestructive testing (NDT) technology for detecting cracks in materials. It is much faster and more efficient than the existing NDT methods it will replace. Its adoption by the Air Force should reduce in-flight accidents. Without the development and adoption of a fast and efficient crack-detection technology, in-flight structural failures can be expected to become more and more common in both the military and civilian fleets. Taxpayers will benefit from the Sonic IR technology as aircraft safety is an issue that impacts every citizen. Furthermore, given the speed and efficiency of Sonic IR, numerous industries, including the automotive industry, may realize the benefits of on-line testing and quality controls.

Item Name: Wayne State University - Systems Engineering Research Center
Request: 2,000,000
Account: RDA-Research & Development Army
Line: 4
PE: 0601104A
Suggested Recipient: Wayne State University
Suggested Location of Performance (major portion of the work): Detroit, MI
Purpose/Project Description: SERC will address the need for Systems Engineering revitalization as identified by DoD. Systems Engineering (SE) is an interdisciplinary field in need of funding for research to meet the needs of the U.S. Army. Funding this project will allow SERC to fit this need. This project will improve the economy and create jobs as SE is a growth area in engineering. It will also help foster energy independence through its research on hybrids.WSU is uniquely positioned to fill critical gaps in the SE field and can meet the growing demand for systems engineering expertise. SERC will collaborate with local industry benefiting the local economy and ensuring the programs meets real-world needs in applied engineering context.

Item Name: Imaging and Cognitive Evaluation of Soldiers Prior to Deployment
Request: 800,000
Account: RDA-Research & Development Army
Line: 72
PE: 0603807A

Suggested Recipient: Wayne State University
Suggested Location of Performance (major portion of the work): Detroit, MI
Purpose/Project Description: This project applies neuroimaging and evaluation techniques to assess cognitive and physical effects of blasts on current soldiers. The long term aim is to create a new assessment of the health of soldiers who have suffered mTBI and to develop treatments. This project both stimulates the economy and provides a research model that can help all soldiers, including the servicemen that are deployed from Michigan.

Item Name: Advanced Thermal and Oil Management System
Request: 9,600,000
Account: RDA-Research & Development Army
Line: 33
PE: 0603005A
Suggested Recipient: Engineered Machined Products Inc.
Suggested Location of Performance (major portion of the work): Escanaba, MI
Purpose/Project Description: The intent of this program is to transition from Demonstration to Production for Thermal and/or Oil Management retrofit system "kits" and electrified components to market for both Military and Commercial vehicles. Full funding of this project will maintain current employment levels at the R&D location allows for an expansion of our manufacturing lines to 2nd shifts which will create 15 new direct jobs here in Delta County. Michigan will benefit by the creation of over 100 new jobs indirectly with full production in 2010. Our suppliers, 21 of which are located in Michigan will have improved revenues. Our electrified systems and components will improve fuel economy on average of 5% while improving the carbon footprint with far less emissions. The elimination of the hydraulic oil fan system will reduce oil waste disposal, oil leaks and drips and improve fire safety. All of which will improve ground water contamination.

Item Name: Soldier Safety and Innovative Automatic Battlefield Capabilities: Advantage Enabling, Intelligent, Multi Sensory and Platform Independent Solutions for the RS JPO family of Military Robots
Request: 1,900,000
Account: APA-Aircraft Procurement Army
Line: 33
PE: 0603005A
Suggested Recipient: Advenovation, Inc.
Suggested Location of Performance (major portion of the work): Houghton, MI
Purpose/Project Description: This project will help to create and sustain jobs and innovation in Michigan. Advenovation proposes to provide solutions within 12 months to increase military effectiveness for the US military through life saving capabilities. This project will benefit American taxpayers in several ways by creating immediate jobs and sustainable jobs; and world class innovation through partnerships with Michigan Technological University. It will also improve the safety for our military defenders, and create standards that will serve the military regardless of specific robots. It will use standard commercial supply chain logistics and create tax revenue for Michigan.

Item Name: Medically Engineered Seating Technology (MEST)
Request: 5,000,000
Account: OMDW-Operation and Maintenance Defense Wide
Line: N/A
PE: 0100D 270
Suggested Recipient: Trac Tec Ltd.
Suggested Location of Performance (major portion of the work): Okemos, MI
Purpose/Project Description: This project will reduce/eliminate costs and effects from back pain and injury suffered by military vehicle operators and caused by inadequate seating systems. This MEST project will create 50 to 75 new jobs in the next 2 years, and potentially hundreds more in production phases. Successful application of MEST to military helicopter seating systems will improve readiness and mission performance, reduce fatigue, eliminate pain-caused distraction, and save millions of taxpayer dollars by eliminating avoidable medical expenses, VA disability costs and millions in other costs associated with lost work time and prematurely ended careers.

Item Name: Innovative Supercomputing Applications Center
Request: $5,000,000
Account: RDT&E
Line: 33
PE: 0603005A
Suggested Recipient: The National Center for Manufacturing Sciences (NCMS)
Suggested Location of Performance (major portion of the work): Ann Arbor, MI
Purpose/Project Description: The National Center for Manufacturing Sciences (NCMS), in collaboration with the U.S. Army Tank-Automotive Research, Development and Engineering Center, Michigan universities and several major US industrial manufacturers and their suppliers propose an Innovative Supercomputing Applications Center. The Center aims to 1) develop new tools and strategies for data capture, tagging, sharing and reuse; 2) develop physics-based simulation and integration tools that bridge the critical gap between design tools and manufacturing processes; and 3) develop virtual and physical collaboration environments and training, high performance computing, and simulation tools to be rapidly transferred from developers to the manufacturing and defense supplier base. The Center will address an issue critical to TARDEC- the ability of suppliers to assess performance and reliability of ground systems in varying conditions and environments.

Item Name: Michigan Center for Ground Robotics
Request: $2,000,000
Account: RDT&E
Line: 33
PE: 0603005A
Suggested Recipient: The National Center for Manufacturing Sciences
Suggested Location of Performance (major portion of the work): Ann Arbor, MI
Purpose/Project Description: The project will plan and design a Michigan Center for Ground

Robotics which will lead in the development and implementation of ground robotic systems. The mission of the Tank Automotive Research, Development and Engineering Center's Joint Robotics Center is to serve as a focal point for military ground vehicle robotics integration efforts and to coordinate support across the life cycle spectrum (research, development, acquisition and sustainment) for all current and future military unmanned ground vehicles and robotic platforms. The proposed Center will address this mission goal while also bringing in other activities in the State including the Army's Robotics Technology Consortium being managed by NCMS as well as the University of Michigan's robotics research activities.

Item Name: Industry Innovations for Defense Sustainment
Request: $5,000,000
Account: RDT&E
Line: 33
PE: 0603005A
Suggested Recipient: The National Center for Manufacturing Sciences (NCMS)
Suggested Location of Performance (major portion of the work): Ann Arbor, MI
Purpose/Project Description: This project would involve the National Center for Manufacturing Sciences (NCMS) and its more than 170 member companies in leveraging industrial technologies to help return equipment to its optimal operational condition. By focusing on weapon system health monitoring and assessment, including prognostic- and condition-based maintenance and on quickly maintaining the effectiveness of the current force, this partnership will result in significant cost and time savings for the US Army as well as improve weapon systems readiness. Working with NCMS the Army can develop new technologies to address these problems in a shorter period of time, with lower cost and immediate viability.

Item Name: Decontamination of B. Anthracis (Stern) and C. Difficile Spores
Request: 2,500,000
Account: CHEM DEMIL
Line: 6
PE: 06013848BP
Suggested Recipient: Eastern Michigan University
Suggested Location of Performance (major portion of the work): Ypsilanti, MI
Purpose/Project Description: EMU is requesting support to augment further development of the interdisciplinary collaboration between the Department of Biology and the School of Engineering Technology. These funds will drive research and development of decontamination sprays, aerosols, and immersion baths to nondestructively protect against anthrax and C. difficile contamination. This inter-college and interdisciplinary research will help bring new products and concepts closer to market-ready condition and spur economic activity in the region that will boost the local economy and create new jobs in the State of Michigan.

Item Name: Connected Vehicle Test and Evaluation Laboratory and Proving Grounds

Request: 3,000,000
Account: RDA
Line: 33
PE: 0603005A
Suggested Recipient: Michigan International Speedway with Connected Vehicle Proving Center
Suggested Location of Performance (major portion of the work):
Purpose/Project Description: The purpose of the Connected Vehicle Test Laboratory and Proving Grounds is to provide a "one stop shop" wireless testing laboratory and a capable evaluation environment for developing, testing, and evaluating connected vehicle systems and applications. These can be used for Department of Defense systems and projects involving vehicular mobile wireless communications, and civilian telecommunications in areas such as intelligent transportation systems and active safety in vehicles. This project will ensure Michigan remains a leader in the defense and automotive technology.

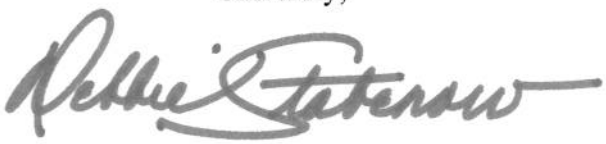
Item Name: Diagnostic Information Gathering System (DIGS)
Request: 4,000,000
Account: RDA-Research & Development Army
Line: 52
PE: 0603734A
Suggested Recipient: Drive Developments, Inc
Suggested Location of Performance (major portion of the work): Sterling Heights, MI
Purpose/Project Description: To extend the service life of its tactical and commercial vehicles, the Army requires on-board sensors that monitor fuel, tire, oil and other environmental conditions. An on-board data collection system will make it possible to perform services and replace parts as needed rather than at scheduled times that may be too soon or too late. It will also give fleet managers the capability to monitor driver location and behavior. It will create jobs in Michigan and will also reduce the cost of maintaining and operating military vehicles. This technology will also save fuel by immediately identifying when tire pressure is too low or when other malfunctions occur, causing the vehicle to consume more fuel than it should.

Item Name: Integrated ISR for Urban Combat (I2UC)
Request: 5,000,000
Account: RDAF-Research & Development Air Force
Line: N/A
PE: 0602702F
Suggested Recipient: Science Applications International Corporation, Ann Arbor Office
Suggested Location of Performance (major portion of the work): Ann Arbor, MI
Purpose/Project Description: The Integrated ISR for Urban Combat (I2UC) enables the warfighter to synergistically use airborne surveillance and through-wall sensing in urban combat to remove the enemy advantage of surprise and concealment, improving warfighter lethality and reducing casualties and collateral damage. In addition to creating approximately 18 new jobs in the Ann Arbor, MI area, the I2UC project will create a capability that exploits synergies between intelligence on the ground and in the air. The resulting efficiencies will enable more effective deployment of existing forces, and ultimately reduce overall costs associated with operations in urban combat.

I certify that neither I nor my immediate family has a pecuniary interest, consistent with the requirements of paragraph 9 of Rule XLIV of the Standing Rules of the Senate, in any congressionally-directed spending item that I requested for inclusion in the National Defense Authorization Act for Fiscal Year 2010.

If you have any questions, please contact Amit Kalra from my staff at 202-224-1613.

Sincerely,



United States Senator Debbie Stabenow