Defense

Information about each project was provided by the requesting entity. Amounts requested are not guaranteed; funds secured are likely to differ from the requested amount. Senator Tester's appropriation requests to the Defense Subcommittee for Fiscal Year 2010 are listed below.

United States Senate Appropriations Subcommittee on Defense

Adaptive Lightweight Materials Technology for Missile Defense

Request Subcommittee Committee Senate Floor Conference Law

Amount: $3,200,000
Blackfeet Nation Tribal Business and Radiance Technologies (Browning, MT)
Design and test adaptive lightweight materials technology to improve missile defense at significantly reduced costs. Blackfeet Nation's tribally-owned business, Pikuni Industries and teammate Radiance Technologies, Inc., with program coordination and oversight by the U.S. Army Space and Missile Defense Technical Center's (SMDTC) and DARPA intend to research, develop, test and demonstrate adaptive lightweight materials technology. The primary focus of this advanced technology effort will be to advance the design, testing, and manufacturing processes that will lead to higher performance light-weight materials at significantly reduced costs.

Adelos Program: Nuclear Security Sensor System

Request Subcommittee Committee Senate Floor Conference Law

Amount: $2,800,000
TerraEchos, Inc. (Missoula, MT)
Adelos will address fundamental security requirements in the protection of nuclear assets from terrorist attack using a covert sensor system designed to provide long-range surveillance and intelligence of potential threat targets. Building upon substantial U.S. government and private sector investment, the Adelos Program will extend the unique capabilities of the BLUE ROSE sensor system in target classification and secure communication of mission-critical information to meet national nuclear security requirements.

Adjuvants that Enhance Natural Resistance Against Mucosal Pathogens

Request Subcommittee Committee Senate Floor Conference Law

Amount: $2,000,000
Montana State University (Bozeman, MT)
To develop pre-clinic data on novel countermeasures that can be used against a

number of select bioterrorism agents of military significance. These compounds enhance natural defense mechanisms of mucosal surfaces of the gut and/or lung, rather than focusing on vaccines for a single agent.

Advanced Helicopter Landing Aid for Brownout Conditions

Amount: $800,000
Bridger Photonics (Bozeman, MT)
This project will fully design, model, and construct a prototype device for field testing that will provide helicopter pilots with accurate real-time displays of obscured landing zones. This technology will accurately measure and render to the pilot the detailed landing zone topology in real time, effectively penetrate deeply obscuring adverse atmospheric conditions, be eye-safe, and provide sufficient spatial resolution to identify both ground and aerial obstructions such as ground personnel and cables.

Advanced Materials for Personnel and Infrastructure Protection

Amount: $3,000,000
Federal Technologies Group (Bozeman, MT)
Develop and implement next-generation materials to increase the thermal performance and improve the energy adsorption capabilities of a personnel armor system of a personnel armor systems and vehicles and develop next-generation materials for military armor applications, infrastructure enhancement, and armored vehicles.

Advanced Wearable Power System Manufacturing

Amount: $1,600,000
MSE Engineering (Butte, MT)
Establish the industrial capability to domestically produce wearable fuel cell power systems to meet Department of Defense requirements and increase soldier survivability, effectiveness and mobility, and mission flexibility.

Aircraft Maintenance Platform Fall Protection System (AMPFPS)

Amount: $6,000,000
Precision Lift, Inc. (Great Falls, MT)
The Army is critically short the required number of Occupational Safety and Health Administration (OSHA) compliant aviation work maintenance platforms that provide adequate fall protection. The Aircraft Maintenance Platform Fall Protection System (AMPFPS) provides a complete OSHA mandated fall protection system that wraps around the aircraft creating an aircraft maintenance bay. AMPFPS is standard equipment for aviation maintenance facilities and is replacing older work stands in current use that do not comply with OSHA standards. Not only are these platforms

mandated by OSHA, they also provide increased worker safety and are estimated to increase maintenance efficiencies by 25 percent to 30 percent and thereby increase aircraft readiness rates.

Compliance Tools Development for Metals in Antifouling Paints

Amount: $800,000
American Chemet (Helena, MT)
Develop a bioavailability model for copper in estuarine and marine waters, and potential alternative bioavailability-based sediment cleanup targets for metal contaminants, to support environmentally protective use of copper-based antifouling coatings on seagoing ships, and develop more site-specific, and thus cost-effective and achievable sediment cleanup targets for metals at Navy and other Department of Defense sites.

Cryofracture/Plasma Arc Demilitarization Program

Amount: $6,400,000
MSE Engineering (Butte, MT)
Construction of mobile cryoplasma demilitarization system that will freeze, crush and destroy obsolete and hazardous munitions in a safe, cost-effective, and environmentally acceptable process. Destruction of stored munitions improves storage capacity and reduces safety concerns. Funding will complete the fabrication and assembly of the mobile unit. The United States currently has over 457,000 short tons of excess obsolete ammunition in the conventional ammunition demilitarization account as well as 100 million pounds of strategic rocket propellant and 1 million tactical missiles. The stockpile of excess obsolete conventional ammunition continues to grow at a cost to the U.S Government for storage, maintenance, and surveillance.

Defense-Critical Languages and Cultures Program

Amount: $2,000,000
University of Montana (Missoula, MT)
The 9/11 Commission stated that the nation's "most pressing need" is for "greater numbers of foreign-language capable intelligence personnel, with increased fluency in specific and multiple languages . . . The key to minimizing terrorist and other threats, is clear: build a professional intelligence cadre with the requisite linguistic skills and in-depth expertise, with a long-term focus on areas of specialization." This program expands a dedicated program leading to functional proficiency in Chinese and adding capacity in Arabic and Persian. It creates new capacity –- at a modest cost –- that supplements Defense and related federal programs that are now operating at or beyond capacity. Continued funding will 1) expand a new program based on best practices to meet DOD and related needs in Chinese by adding 5 new Chinese language faculty; 2) purchase and install necessary computers, language software, and other language teaching hardware related to this expansion; 3) launch a new program in Arabic and Persian by adding new faculty in those languages; and 4) extend scholarship assistance for ROTC students who enroll in a national pilot program in intensive Chinese. The program is expected to be fully funded by training fees beginning in year four of its operation (2011-12).

DEPUTEE High Powered Microwave Non-Lethal Weapon

Amount: $4,600,000
MSE Engineering (Butte, MT)
This project will demonstrate High-Power Microwave (HPM) technology for non-lethal offensive and defensive weapon applications against vessels, land vehicles, aircraft, and command and control installations. Neither the U.S. military nor law enforcement agencies have this capability. Investigation will also be done to test HPM technology against unfriendly forces using small boats against U.S. Naval forces in piracy against civilian shipping, as well as for the pre-detonation of Improvised Explosive Devices (IEDs).

Dual Use Optical Sensors for Advanced Military Applications

Amount: $1,600,000
Montana State University (Bozeman, MT)
Develop and deploy combined active and passive optical remote sensing systems to characterize the effects of the atmosphere on polarization signatures that are being explored for advanced military sensing to identify camouflaged targets. The proposed research program will combine MSU expertise in optical sensors and atmospheric optics with local optics industry expertise in compact hyperspectral imagers to provide data and measurement capabilities of dramatic significance to the Department of Defense.

Improving Mission Preparedness

Amount: $2,500,000
University of Montana (Missoula, MT)
The provision of adequate training strategies prior to mission deployment and the interaction of the human weapon system with environmental stressors combine to determine the overall effectiveness of operational human performance. This project will integrate novel approaches to training for these elite warfighters. Numerous programs attempt to enhance the technology of equipment provided to the combat controllers and other special forces. Unfortunately, this adds undue complexity to the job and increases the required load carriage. Amplifying the effectiveness of the advanced combat controller requires more than simply adding costly weight to the gear they carry. This proposal focuses on improving the capabilities of the human weapon system by developing strategies to recognize early training potential and warning signs, better preparing the human weapon system for effective mission performance.

Integrated Tourniquet System Research

Amount: $4,500,000

Blackhawk! (Bozeman, MT)
The Blackhawk! Integrated Tourniquet System (ITS) integrates four life saving tourniquets in the pants and four tourniquets in the shirt of the standard uniform. The tourniquets are correctly positioned and oriented to the upper and lower extremities for immediate access under existing gear and can be operated by the wearer, a team member, or a medic. Military researchers have documented that approximately 82 percent of war injuries suffered in combat involve the extremities –- often severe and multiple injuries to the arms and legs. With the advent of body armor, the most common cause of preventable deaths in the tactical environment can be attributed to rapid loss of blood due to extremity wounds. Importantly, this system is also useful in training scenarios, can be reactivated multiple times, and has the ability to train to build muscle memory.

International Heart Institute/U.S. Army Vascular Graft Research Project

Amount: $1,600,000
St. Patrick Hospital (Missoula, MT)
Due to the high rate of vascular injury, there is a need for a readily-available, sterile, freeze-dried vascular graft made from animal tissue for the management of traumatic vascular injuries during wartime. The International Heart Institute Foundation has developed an original tissue treatment process which utilizes animal arteries to produce vascular grafts. Technology will allow for reduced reliance on temporary shunts used in battlefield surgery.

LCP Based Ultra Low Powered Flexible Microsystems for Precision Strike Munitions

Amount: $8,000,000
DAQ Systems, LLC (Bozeman, MT)
Develop improved guidance systems by incorporating Liquid Crystal Polymer (LCP) Printed Circuit Board (PCB)-Based MEMS devices with signal conditioning electronics. Developing this LCP PCB-Based MEMS capability will open up a broad new technical capability enabling systems for next generation missile systems, space base radar (SBR) systems, detectors and sensors.

Low Acoustic and Thermal Signature Battlefield Power Source

Amount: $3,200,000
Montana Tech (Butte, MT)
Research, develop and construct a reliable, durable low-acoustic and low-thermal battlefield fuel cell as a power source for the warfighter. This project proposes to reduce this weight component by developing a single, low-weight power source with a lower sound and temperature signal, thus making it harder for an enemy to identify. A hydrogen fuel cell source will also serve to reduce the Navy's overall energy costs.

Mariah Hypersonic Wind Tunnel Development Program

Amount: $7,600,000
MSE Engineering (Butte, MT)
The U.S. Army Mariah Hypersonic Wind Tunnel Development Program is the nation's only program that is developing the wind tunnel technology that is required to test and evaluate a new generation of missiles, space access vehicles, and high-speed aircraft utilizing ramjet and scramjet propulsion technology. Continuing authorization would allow construction to continue on schedule. Project will continue funding development of nation's only wind tunnel technology required to test and evaluate next-generation missiles. MSE Technology Applications, Inc. is serving as the Army's Prime Integrating Contractor for the program.

Marine Expeditionary Rifle Squad – Reconfigurable Vehicle Simulator (MERS-RVS)

Amount: $2,400,000
Western Computer Services, Inc. (Helena, MT)
Project will incorporate communications, C2, Human Factors, and fighting capability. MERS-RVS can be reconfigured to replicate any of the transport vehicles in service today. It will allow for easy removal and repositioning of seating, communications and C2 links, sensor inputs, visibility and will accommodate changes with a minimum of tools and systems. MERS-RVS will have a complete systems approach to the Human System Integration for the Infantry and the host vehicle. This simulator will support the efforts of the USMC's Program Manager Marine Expeditionary Squad (PM MERS), and the associated vehicle PMs within the USMC.

Materials Technology for LED Lighting Applications

Amount: $2,400,000
Federal Technologies Group (Bozeman, MT)
This project will utilize metal coated diamond particle technology to produce a superior thermal interface adhesive to enhance heat removal from LEDs. By developing a method to remove the heat from LEDs, this project will reduce the costs of LEDs and greatly expand their use in residential, government, commercial and industrial applications. There is a national need to reduce power consumption at all levels, and this program will enable the use of LED technology for industrial, residential and commercial lighting to reduce energy consumption by 80 percent.

Metamorphose/i3 Data Conversion and NAVAIR Standard Viewer Support

Amount: $12,000,000
Synesis7 (Butte, MT)
NAVAIR manages a massive amount of technical and operations data that needs to be converted to an enterprise-wide common sharable XML data standard and

structure that will go into a common data repository/database. The Department of Defense and Navy have mandated the migration to the international AECMA S1000D standard for developing/authoring, structuring, converting, and presenting technical data. This is essential to achieve cross-organization and systems interoperability, system to system/application to application communication and data sharing, and delivering common focused data and information to the actual point of use to better support the day-to-day activities of military personnel in the performance of their jobs.

MilTech Expansion Program

Amount: $1,600,000
Montana State University (Bozeman, MT)
This program will improve the cost and efficiency of transferring technology from small businesses to the U.S. military. The MilTech expansion ensures that the warfighter acquires critically needed new technology more quickly, reliably, and cost-effectively. MilTech helps innovative small companies to overcome key technical, manufacturing, and procurement hurdles that stand in the way of delivery of new technology to the U.S. military.

Montana Military Museum

Amount: $100,000
Montana Military Museum/Montana National Guard (Helena, MT)
Funding will enable the expansion of the building housing the museum. Although the museum is a non-profit organization, the museum is a centerpiece for recruiting for the Montana National Guard.

Montana National Guard Counterdrug Task Force

Amount: $800,000
Montana National Guard (Helena, MT)
Funding will ensure continued activities of the Montana National Guard in the state's counter-drug task force. Current activities include both youth education and providing aerial and intelligence support to state and local law enforcement agencies.

Network Centric Airborne Defense Element

Amount: $8,000,000
Sonju Industrial (Kalispell, MT)
Develop a near-term, low cost, air-launched boost/ascent phase ballistic missile intercept capability that addresses the asymmetric threat and short to intermediate range ballistic missiles, and transition it to a development program that could provide a contingency capability to the war-fighter by the 2013 time frame.

Neuroprotective Agent to Prevent Brain Damage

Amount: $3,500,000
University of Montana (Missoula, MT)
The study proposed is designed to establish the preclinical efficacy of methamphetamine as a neuroprotective agent to prevent neuronal loss, damage following stroke, hypovolemic shock and traumatic brain injury.

Next Generation Simulation Training for AFSOC Pararescue Forces

Amount: $1,600,000
National Center for Healthcare Informatics (Butte, MT)
Develop high fidelity simulated training scenarios for the Air Force pararescuemen which closely resemble real-world environments. The NCHCI will begin with development of a prototype system; providing visual, tactile, and auditory stimuli to Pararescuemen, operational experts and trauma experts.

Regenerative Therapeutics for Combat Wound Healing

Amount: $5,000,000
Resodyn Corporation (Butte, MT)
The culture and environment in which the U.S. is expected to be engaged in battle has evolved into guerilla warfare in which IEDs and similar explosive devices are expected to be the norm; as well as other catastrophic injuries that are inflicted on the warfighter. The technology resulting from this research will provide regenerative medicine applications to reconstruct human bone and tissue. These applications will provide medical breakthroughs in which battlefield wounds can be repaired rather than have limbs replaced with prosthesis. The technology can be further applied to commercial medical sectors for bone and tissue damage caused by both catastrophic accidents and disease.

Titanium Extraction, Mining and Process Engineering Research

Amount: $4,800,000
Universal Technical Resource Services, Inc. (Butte, MT)
The TEMPER program will deliver lightweight weapons at an affordable cost for the Army, enhancing lethality and performance while reducing cost. TEMPER is a key component of the Army's roadmap to low-cost titanium and is essential to the continued delivery of affordable titanium components for Stryker, Abrams, Joint Lightweight Howitzer, and other Army systems.

Ultra Wideband Active RF Detection of IEDs

Amount: $1,760,000
S2 Corporation (Bozeman, MT)
IEDs pose a significant threat to the warfighter, as they continue to injure U.S. soldiers on foreign soil and are anticipated to threaten troops and civilian population centers in the future. IEDs are basically homemade devices meant to maim and kill people. There is a recognized need for technological advances that (1) easily and quickly view targets hidden or buried underground, and (2) are able to positively identify those objectives as IEDs. The S2 technology can enable a new sensor capability for ground looking RF detection and real-time discrimination of IED detection. This could offer a major breakthrough in warfighter and civilian protection detection capabilities.

Visual Augmentation System Hand Held Imager

Amount: $4,000,000
FLIR Systems (Bozeman, MT)
This electro-optical/infrared sensor provides stabilized long-range surveillance, identification, detection and tracking capabilities in all viewing and weather conditions or at ranges at which the operator would not normally be able to see the target. The unit is interchangeable among Special Operations Forces (SOF) vehicles and interoperable with a central control station.

Whitmore Ravine Erosion Control and Stabilization

Amount: $6,885,000
Cascade County Conservation District (Great Falls, MT)
Over the last several decades, stormwater runoff from Malmstrom Air Force Base has caused significant erosion to two forks of Whitmore Ravine, which sits on private lands between the base boundary and the Missouri River. In addition to the loss of valuable agricultural lands once adjacent to the ravine, the erosion has delivered an estimated 470,000 tons of sediment to the river between Rainbow and Morony Dams (a 303d listed reach of the Missouri) and caused regular damage to the Rivers Edge Trail. The proposed project design is a combination of onbase work to reduce peak flows and offbase work to install bypass pipelines around the ravine.