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United States Senate

March 5, 2010

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

The Honorable John McCain
Ranking Member
Senate Armed Services Committee
228 Russell Senate Office Building
Washington, DC 20510

Dear Chairman Levin and Ranking Member McCain:

As the Committee begins its consideration of the FY2011 National Defense Authorization Act, I am writing to request support for the following projects as attached. This year the Committee will consider authorizing Atomic Defense Activities consistent with the President's commitment to ensure our nuclear weapons laboratories can maintain the stockpile into the foreseeable future as it negotiates its reduction. I support the President's budget for these activities but would like draw the distinction between maintaining the weapons systems themselves and maintaining the underlying science of the stockpile, which is essential to an enduring science and engineering capability at the laboratories. In this regard, I believe the current budget has focused on life extensions of the B-61 and W-78 systems but not the underlying science capability. For example, the administration's Fiscal Year 2011 budget for the Los Alamos Neutron Science Center has for the second year proposed eliminating necessary revitalization upgrades so that it can continue to provide high fidelity data on the atomic properties of weapons test data and materials. I do not support this action and ask this committee to authorize $20 million to continue its upgrade path. This machine is unique within the weapons complex, capable of providing data on weapons materials that require high levels of safety in a secure environment and is the gateway to future science missions of the laboratory.

I am also concerned about the Operationally Responsive Space Program. The purpose of this program is to provide combatant commanders access to satellite data unique to their area of responsibility by rapidly building and launching small satellites – as compared to slower and larger national technical systems that take years to build and must be tasked based on competing requirements. The Department of Defense is not taking seriously this transformative program and in fact it appears that other nations are ahead of the Department's own efforts. I find this lack of commitment unacceptable to an area not only important to soldiers but the competitive health of our nation's satellite industry and ask to work with the committee to strengthen this program.

I thank the committee for considering my request; my point of contact is Dr. Jonathan S. Epstein, 224-5521.

Sincerely,

Jeff Bingaman
U.S. Senator

Item: Adaptive Threat Lab for IED Countermeasures Equipment (ICE)
Request: $5,000,000
Account: RDTE, Army
Line: 18
PE: 0602620A
Suggested Recipient: New Mexico State University
Suggested Location: Las Cruces, NM
Purpose: IEDs continue to be a threat to forces in Afghanistan and Iraq. New Mexico State University, through its Physical Science Laboratory, has been a leader in developing counter-IED technology, including products that were developed, tested, and deployed OCONUS in 2004. This funding would enable NMSU to develop and instrument a fully equipped, dedicated Electronic Warfare (EW) Adaptive Threat Laboratory to continue research, design and development of variant prototypes. This includes the potential development of a standard, modular system that will be based on current fielded systems and emerging threats and that can become the basis for all future EW systems.

Item: Advanced Deformable Mirrors for High Energy Lasers
Request: $5 Million
Account: RDT&E, Air Force
Line: 17 (High Energy Laser Systems)
PE: 0602890F
Suggested Recipient: MZA Associates Corporation and Active Optics Systems, LLC
Purpose: To provide an inventory of high power laser deformable mirrors which meet DoD specifications and requirements for use by government-sponsored programs. The program, which received funding in FY 2010, has developed a method to perfect current high power DM technology, address issues of ruggedness and packaging, and to evaluate better epoxies and test the new and improved DM's for existing high power applications. Funds under this program would be utilized to manufacture approximately 100 mirrors. It is fully anticipated that approximately 50% of the cost consists of parts and materials, with labor costs constituting the other 50%. The work would be performed in Albuquerque at the manufacturer's facility.

Item: Advanced Power Systems for ORS Use
Request: $4,200,000
Account: RDTE, Air Force
Line: 22
PE: 0603401F
Suggested Recipient: Goodrich ISR Systems
Suggested Location: Albuquerque, NM
Purpose: This funding will enable rapid integration of new and innovative power system technologies, significantly reduce recurring system engineering by speeding component integration, and provide a common platform for software reuse and auto-code generation. These modular units will enhance the power distribution capability built into the Space PnP Avionics (SPA) to efficiently and effectively deliver and distribute power to the entire spacecraft, thereby enabling rapid fielding and reliable function of ORS-capabilities.

Item: Aerospace Workforce Development Support
Request: $450,000
Account: RDT&E, Air Force
Line: 9
PE: 0602601F
Suggested Recipient: NM Spaceport Authority

Purpose: These funds will be used to train and support the education of the growing workforce associated with the NM Spaceport and other activities at use of the airspace over White Sands Missile Range. In order to adequately prepare a local skilled labor pool for these upcoming spaceport related job opportunities, a comprehensive set of local STEM-based aerospace workforce development programs must be developed. With this funding directed to the launch range services and operations budget of our partners at WSMR, they will be able to support both pre-existing and new aerospace workforce development programs through staff time and operational resources dedicated to spaceport educational missions.

Item: AFRL/RV Decision Support Systems Cloud Computing Project
Request: $4.57 Million
Account: RDT&E, Air Force
Line: 22
PE: 0602601F
Suggested Recipient: Silicon Graphics International (SGI)
Suggested Location: Albuquerque NM
Purpose: The Air Force Research Laboratory (AFRL) – Kirkland AFB in Albuquerque, New Mexico endorses the development of a cloud computing service for the Space and Intelligence community. This project will be conducted in partnership with Silicon Graphics International (SGI). Space operations and Intelligence communities are increasingly required to provide near-real-time, fused data collaboration and analysis from information collected across a number of disparate space, ground, and in-theater systems. Localization of data hubs and architectures supporting viable, but mission-specific data sets hamper collaborative near-real-time data mining searches and data fusion. With the increasing number and diversity of sensors and other data sources, collection, normalization, and analysis of large data sets has become a bottleneck in the development of COA recommendations provided to operational decision makers. This new data and metadata mining service will enable more rapid and higher confidence course-of-action decisions by commanders at the tactical edge.

Item: Algal Biofuels for Aviation
Request: $4,000,000
Account: RDTE, Air Force
Line: 19
PE: 0603216F
Suggested Recipient: New Mexico State University
Suggested Location: Las Cruces, NM

Purpose: This funding targets biofuel production from algal biomass as an alternative source of fuel for aviation (both civilian and military) and will optimize gas turbine. This project is aimed at: algal biomass production, conversion to aviation fuel, electricity, and other valuable by-products; making design adjustments and improvements in a gas turbine (for power generation and aviation); and enabling transformational technology for the industry sectors of military and civilian aviation.

Item: Analyzing the Electromagnetic Pulse (EMP) Threat to Critical Infrastructure
Request: $1,000,000
Account: RDTE, Army
Line: 137
PE: 0605602A
Suggested Recipient: New Mexico Tech University
Suggested Location: Socorro, NM
Purpose: This funding will focus on how to improve prevention, mitigation and recovery for the nation's critical infrastructure from electromagnetic pulse (EMP) destruction. Current models of these systems are excessively large and must run on high cost parallel computing machines, and they do not allow for scalability to both large and small models of interconnections and behaviors. NMSU will use its unique and expert knowledge of complex systems analysis to develop critically important and technically viable solutions that will discern impacts of EMP on "systems within systems" regardless of size.

Item: Anti-Vehicle HPM Threat Deterrent
Request: $5,000,000
Account: RDTE, Air Force
Line: 14
PE: 0602605F
Suggested Recipient: Fiore Industries, Inc
Suggested Location: Albuquerque, NM
Purpose: Funding would support non-lethal development and testing of a High-Powered Microwave (HPM) system to stop vehicle threats to military units. The anti-vehicle threat deterrent program leverages prior development funding, which included a proof-of-concept, using HPM applications to shut down engine operations by a technique (patent pending) known as Intelligent Waveform Modulation (IWM). Funds would allow for the development of the first production system and add to the database of vehicle susceptibilities. Testing will occur both in the laboratory and field test environments. Fiore's patented vehicle-stopping HPM technology has already been tested against 12 different vehicles during proof-of-concept demonstrations using HPM applications to arrest engine operations. Development of a prototype and integration of a prototype system ready for field testing would enable military units to field-test the system against major threats facing military units and installations.

Item: Center of Excellent for Geospatial Science
Request: $1,000,000

Account: Intelligence
Line: 195
PE: 0305102B
Suggested Recipient: New Mexico State University
Suggested Location: Las Cruces, NM
Purpose: This funding will continue operations of the Center of Excellence for Geospatial Science in collaboration with the National Geospatial-Intelligence Agency (NGA). NGA provides intelligence analysis, maps, remote sensing of war zones, and geospatial analysis of Human Terrains for war fighters in Iraq, Afghanistan, and other locations. The Department of Geography, Department of Surveying Engineering, and Physical Science Laboratory (PSL) at NMSU are conducting this work. Continuing funding is requested to support NGA's workforce development goals in geospatial analysis and Intelligence studies. The project will deliver education, training, equipment, and student scholarships for those seeking careers with DoD, NGA, and in the Intelligence Community.

Item: Civil Air Patrol Operations and Maintenance budget for FY 2011
Request: $4.5 million
Account: 3400F Operations & Maintenance, Air Force
Line: BA: 04, Sub activity: Servicewide activities, line: 430, 042I, Civil Air Patrol
PE: N/A
Suggested Recipient: Civil Air Patrol
Suggested Location: Maxwell AFB,
Purpose:

Funding allows essential services and programs to continue for communities, states and Federal agencies at the 2010 level. The cut significantly degrades readiness for search/rescue, homeland security and disaster missions as well as lessens support for community and youth programs.

Item: Counter-Electronic High Power Microwave Advanced Missile Project (CHAMP)
Request: $6,000,000
Account: RDTE, Air Force
Line: 26
PE: 0603650F
Suggested Recipient: Ktech Corp
Suggested Location: Albuquerque, NM
Purpose: This funding will develop, demonstrate and assess a multi-shot, multi-target aerial HPM platform that is capable of degrading or damaging electronic systems. Combatant commanders need additional military options to defeat high value adversary electronic systems critical to military, industrial, and civil infrastructure. One requirement expressed is to develop a cost effective, low collateral damage weapon system to disable or damage electronic systems. Other combatant command desires include options to control escalation of conflicts, reduce post-conflict reconstruction costs, and speed stabilization operations. Based on the limitations

of conventional force options, a multi-shot, multi-target aerial platform that will disrupt, or damage electronic systems may play a key role in future conflicts. This funding will produce five aerial platforms that satisfy flight safety, delivery aircraft integration, and military flight requirements that will be composed of a compact HPM payload engineered to integrate into either an existing operational unmanned aerial platform, or one that can be militarized in the time frame of this effort.

Item: Cyber Assurance and Unified Security Education (CAUSE)
Request: $3,000,000
Account: RDTE, Army
Line: 137
PE: 0605602A
Suggested Recipient: New Mexico Tech University
Suggested Location: Socorro, NM

Purpose: This funding will promoting awareness, building sophisticated tools, and assisting organizations in emergencies, for advanced cyber security needs, incident response, and cyber-crime assessments. The proliferation of digitization, smart grid technologies, and other mobile electronic devices is driving unprecedented growth in the collection, storage and management of all types of data. To counter the widespread use of advanced digital technologies that facilitates adversaries to better plan and execute attacks on innocent civilians and key targets, this funding would develop a program directed toward research, training, education, and service with respect to cyber security, information assurance, and incident response needs.

Item: Deployable Joint Command and Control (DJC2) Shelter Upgrade Program
Request: $5,000,000
Account: Other Procurement, Navy
Line: 65
PE: N/A
Suggested Recipient: Alaska Structures
Suggested Location: Las Cruces, NM
Purpose: This funding will provide shelters, generators and environmental control units designed specifically for rapid deployment, improved transportability and operational efficiency as the physical backbone of the system provided to combatant commanders. The upgraded shelters are designed for severe climates and difficult terrain. Each shelter offers enhanced wind and temperature limits providing a safe environment in conditions of both severe cold and heat. The ECUs are designed for the same severe conditions where the shelters are deployed, providing a temperate environment for forward-deployed personnel and equipment. The DJD2 shelter upgrade program will equip the combatant commanders with a standardized command and control capability, eliminating the practice of relying on local or ad hoc C2 resources cobbled together at the last minute during a crisis. A fully fielded DJC2 system can be set up and fully operational in less than 24 hours, and includes: self-generated power; environmental control; shelters; infrastructure; limited communications equipment; operator workstations

(laptop computers, chairs, tables); a video display system; intercommunications; local area networks; and access to wide area networks.

Item: Directed Energy Joint Technology Office
Request: $2,000,000
Account: RDTE, Air Force
Line: 14
PE: 0602890F
Suggested Recipient: Schafer Corporation
Suggested Location: Albuquerque, NM
Purpose: This funding will provide an office that expands the current High Energy Laser Joint Technology Office (HEL-JTO) into DOD Directed Energy Joint Technology Office (DE-JTO). Such an expansion was called for in a Defense Science Board report in 2007. This office will ensure that all services are working cooperatively, rather than competitively, on directed energy work, that research and testing is not being duplicated, and that progress is being shared to ensure that all relevant and updated information is available to those who need it.
Legislative Language Request (Report): The Secretary shall provide to the relevant Congressional committees no later than February 2011, a long-term plan for expanding the Joint Technology Office for High Energy Lasers into supporting the overall mission of the Department into Directed Energy consistent with the 2007 Defense Science Board report on Directed Energy.

Item: Downward-Looking Radar for Subsurface Irregular Warfare Operations
Request: $1,800,000
Account: RDTE, Defense-Wide
Line: 27
PE: 0603122D8Z
Suggested Recipient: Stolar Research Corporation
Suggested Location: Raton, NM
Purpose: This funding will provide advanced development and field-testing of state-of-the-art downward-looking radar technology with subsurface detection capability unachievable by existing ground penetrating radar instruments. The underlying technology is an extension of previous successful development work related to the detection of shallow landmines. Modern (i.e., irregular) warfare requires technology capable of detecting shallow tunnels, bunkers, and caches used by insurgents for various purposes. Adversaries are regularly negating U.S. conventional warfare strengths through the use of unconventional means. Better tools and methods are needed to fight the enemy on his turf and for urban clearance involving engagements in tunnels, bunkers, and caches used for sanctuary (e.g., safe-havens and operations) and enterprise (e.g., logistics and storage) purposes.

Item: Environmentally Sustainable Combat Vehicle Fire Suppression Agent and Delivery System
Request Amount: $800,000
Account: Army RDT&E

Line: 33 Combat Vehicle and Automotive Advanced Development
PE: 0603005A
Suggested Recipient: Aerojet-General Corporation
Suggested Location: Socorro, NM 87801

Purpose: Engineering, development and full-scale testing of a modified version of a proven water-based fire suppression system for use in combat vehicles. The anticipated outcome is a system ready to go into production in support of our troops on the ground.

Item: Expeditionary Micro-Grid For Forward Operating Bases
Request: $3 million
Account: RDT&E, Army
Line: 18
PE: 0602705A
Suggested Recipient: Honeywell International
Suggested Location: Albuquerque, NM
Purpose: To continue development of a solution to inefficient deployed power generation systems by creating an Expeditionary Micro-Grid to automatically engage power sources based on power requirements, discriminate between power loads, and turn off non-critical electrical loads to reduce peak usage.

Item: Fingerprint Capture Device
Request: $4,600,000
Account: RDTE, Army
Line: 132
PE: 0605326A
Suggested Recipient: Lumidigm, Inc
Suggested Location: Albuquerque, NM
Purpose: This funding will provide for the requisite development of a rugged, portable, compact, easy-to-operate, four-slap and rolled fingerprint scanner device that enables simultaneous TIR and multispectral imaging and produces an image suitable for military and law enforcement applications. While biometric identification via fingerprint scanning is integral to homeland security and every military deployment, in practice it currently has serious operational deficiencies. Force protection, civilian disaster assistance, border security, law enforcement and intelligence collection efforts would be greatly enhanced by the availability of the proposed device. This device is needed by the warfighter and would be employed in the CONOPS of numerous Battlefield Operation Systems (BOS).

Item: High Energy Laser System Test Facility (HELSTF)
Request: $7,000,000
Account: RDTE, Army
Line: 130
PE: 0605605A
Suggested Recipient: Northrop Grumman Corporation

Suggested Location: White Sands Missile Range, NM
Purpose: Thus funding will be used for a series of five to ten shoot-downs of targets ranging from mortars and UAVs to advanced high-speed, maneuvering weapons. Initiated in 2009 and brought to operational status in 2010, the Solid State Laser Testbed Experiment (SSLTE) at the High Energy Laser System Test Facility is a unique national asset for conducting high energy laser weapons testing. It is the only asset that combines a high power laser source (the 105 kW Joint High Power Solid State Laser) with a beam director, pointing, tracking, and command and control capabilities to enable dynamic live fire testing against flying targets including mortars, missiles, and unmanned aerial vehicles. These live fire experiments are critical enablers for the development, test, and evaluation of future operational solid state laser weapons systems for all Services in the DOD.

Item: High Energy Conventional Energetics (HECE) Phase III
Request: $6,000,000
Account: RDTE, Navy
Line: 4
PE: 0602114N
Suggested Recipient: Applied Research Associates, Inc
Suggested Location: Albuquerque, NM
Purpose: This funding will provide the nation with the ability to defeat or neutralize chemical or biological weapons of mass destruction with little or no collateral effect with conventional weapons rather than the only other alternative means – radiological or nuclear weapons. About 10 times TNT detonation energy is required to defeat chem-bio WMD. Currently, the energy of the most powerful explosives barely reaches two to three times that of TNT detonation energy. This program will produce 10 times TNT detonation energy by leveraging thermobaric technology for payloads, developing new weapon casings and producing caustic by-products that are 100+ times more effective in agent kill. This program satisfies an urgent requirement to defeat mobile chemical-biological weapons of mass destruction (chem-bio WMD) and hard and deeply buried targets. The program develops the enabling technologies required to produce sufficient energy to defeat these targets with no collateral damage.

Item: High Energy Density Capacitors for Military Applications
Request: $6,000,000
Account: RDTE, Navy
Line: 4
PE: 0602114N
Suggested Recipient: TPL, Inc
Suggested Location: Albuquerque, NM
Purpose: This funding will provide for a continued engineering development program for a new generation of capacitors. An increased use of electrical energy in ships, vehicles and aircraft requires more efficient ways to store energy and release it in extremely short timeframes. The most effective way of accomplishing these requirements is through the use of high energy density (HED) capacitors, devices that operate at high voltage and store energy with high efficiency. The first generation of this new material system has demonstrated a two-fold

improvement in energy density storage, while material improvements suggest additional gains are feasible.

Item: High Power Microwave Narrow Band Threat System
Request: $6,000,000
Account: RDTE, Defense-Wide
Line: 134
PE: 0604940D8Z
Suggested Recipient: Ktech Corp
Suggested Location: Albuquerque, NM
Purpose: This funding would accelerate the procurement of Narrow Band Threat Systems (NBTS) under the existing DETEC project to provide the Test and Evaluation community with a necessary tool to establish vulnerability levels and develop countermeasures for the emerging foreign HPM threat. The threat to critical U.S. civilian and military infrastructure posed by current and future foreign High Power Microwave (HPM) weapon systems is real and increasing. In order to establish the level of vulnerability and to define effective countermeasures, HPM threat simulators are being developed to test and evaluate U.S. military systems and commercial-off-the-shelf (COTS) equipment used by DOD. The DOD Test Resource and Management Center (TRMC) has expressed significant interest in pursuing the procurement of additional NBTS as quickly as possible, in order to cover the microwave threat frequency spectrum defined in the latest CTEIP Tri-Service Study.

Item: Holloman High Speed Test Track
Request: $6,000,000
Account: RDTE, Air Force
Line: 98
PE: 0604759F
Suggested Recipient: General Atomics
Suggested Location: Holloman Air Force Base, NM
Purpose: This funding will provide provides capability for the AF to test critical components at the MagLev facility at Holloman Air Force Base with significantly reduced technical, schedule, and cost risks. The MagLev goal is to provide a low-vibration environment of rocket-propelled sleds for speeds up to Mach 10. The system provides the capability to test a variety of payloads at a ground level facility while simulating environments of flight at altitude. The advantages of the system are significantly increased data acquisition fidelity compared to at altitude data acquisition. Altitude data acquisition requires the use of telemetry systems that are becoming increasingly limited with frequency availabilities at various test facilities. Ground tests are conducted in a very controlled, highly instrumented environment, whereas altitude test space cannot be controlled as well or as effectively monitored.

Item: Inland Water Quality and Desalination Program
Request: $3,500,000
Account: RDTE, Navy
Line: 14

PE: 0602782N
Suggested Recipient: New Mexico State University
Suggested Location: Las Cruces, NM
Purpose: This funding will conduct applied research in technological issues related to inland desalination. The focus will be on developing affordable and deployable technologies for sustainable water resources. Due to similarities in water resource chemistry, availability and the environment, the developed technologies will have direct use for DOD in the areas where troops are currently deployed. Additionally, the current research has direct application to the DOD's on-going effort in development of high efficiency/low energy water desalination.

Item: Laser Weapon System-Power Conversion and Integration (LaWS PCI)
Request: $6,000,000
Account: RDTE, Navy
Line: 73
PE: 0603925N
Suggested Recipient: L-3Communications/Global Security and Engineering Solutions (GS&ES)
Suggested Location: Albuquerque, NM
Purpose: This funding will support the power conditioning and integration of the Laser Weapon System (LaWS) with convention systems such as the CIWS Phalanx in order to provide increased engagement time and range for defense against anti-ship missiles, swarm attack, and small munitions attack for the U.S. Navy's surface fleet. The system will rely on state-of-the-art energy storage media and novel topology to provide the necessary 400 kW pulse to the laser for limited duty, while drawing limited kW of power from the CIWS power drop. The current gap in force protection due to the capabilities of standard munitions does not fully ensure the safety of our deployed forces. This funding will increase U.S. safety and capability of operations in potentially dangerous environments.

Item: Laser-Effects Requirements for Tactical Laser Weapon Development
Request: $3,000,000
Account: RDT&E, Air Force
Line: 14
PE: 0602605F
Suggested Recipient: Ball Aerospace & Technologies Corp.
Suggested Location: Albuquerque, NM
Purpose: The proposed project would allow the Air Force Research Laboratory (AFRL) to more rigorously define requirements before detailed High Energy Laser (HEL) system designs are finalized. Specifically, the funds would enable tactical target laser effects data to be obtained in time to affect critical decisions for the development of important new Air Force and other tactical laser weapon programs. Approximately $1.25M would be used to upgrade the capabilities of the nearly 30-year old AFRL/RD laser effects test facility, and the remainder would be used to perform critical experiments and analysis to quantify lethality requirements

Item: Long Wavelength Array (LWA)
Request Amount: $2 M

Account: RDT&E, Naval Research Lab
Line: 15
PE: 0603114N
Suggested Recipient: New Mexico Tech University
Suggested Location: Socorro, NM

Purpose: The Long Wavelength Array (LWA) will provide high-precision, synoptic views of the ionosphere and solar weather events, and a wealth of astrophysical phenomena. By opening the last frontier of the electromagnetic spectrum, it will be a premier international facility for conducting fundamental research in space physics and astrophysics, for educating a next generation of US students, and for creating an expert academic user community that can achieve future advances in these fields. It will thus be a major element in New Mexico's leadership role in space physics. It will also be a pathfinder for future much larger (multi-billion dollar) instruments such as the Square Kilometer Array (an international project), and a low frequency radio telescope on the far side of the moon (a NASA project).

Item: Land Transfer Reauthorization
Request: NA
Account: NA
Line: NA
PE: NA
Suggested Recipient: Los Alamos County
Suggested Location: Los Alamos, NM
Purpose: The land transfer re-authorization has to be extended, it serves as an important mechanism for transferring excess land from Los Alamos National Laboratory to the local communities for development.
Legislative Language: Section 632 of the Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 1998 (Public Law 105-119; 111 Stat. 2523; 42 U.S.C. 2391 note), as amended by Section 3119 of the John Warner National Defense Authorization Act for Fiscal Year 2007 (Public Law 109-364; 120 Stat. 2083) is amended — (1) in subsection (d)(2), by striking "November 26, 2012" and inserting "November 26, 2022"; and

Item: Los Alamos Neutron Science Center Revitalization Project
Request: $20,000,000
Account: RTBF, Construction 09-D-007
Line: NA
PE: NA
Suggested Recipient: Los Alamos National Laboratory
Suggested Location: Los Alamos, NM
Purpose: This funding will continue the LANSCE revitalization project, Administrator D'Agastino testified to the SASC and Energy and Water Subcommittee on appropriations it is needed to support the stockpile in all phases of the life extension program and advanced computing campaigns, 62% of funding for LANSCE derives from the NNSA weapons programs, the

remainder supports defense and other science missions at the laboratory and is considered a key facility for sustaining the long-term science capability of Los Alamos.

Item: Materials Processing Center for Armor, Anti-armor and Industrial Applications
Request: $2,000,000
Account: RDTE, Army
Line: 4
PE: 0601104A
Suggested Recipient: New Mexico Tech University
Suggested Location: Socorro, NM
Purpose: This funding will continue an initiative to develop a new generation of light weight structural materials for ground vehicles with superior armor penetration and blast resistance. Continued improvement of military platforms, vehicles, and armor is necessary to the warfighter in the field. This new material can be considered for the Army's Ground Combat Vehicle (GCV), Infantry Combat Vehicle and the Bradley Block upgrade.

Item: Mobile Command, Control and Communications (MC3) Shelter
Request: $3,000,000
Account: RDTE, Defense-Wide
Line: 174
PE: 084767D8Z
Suggested Recipient: New Mexico Tech University
Suggested Location: Socorro and Playas, NM
Purpose: This funding will provide for the development of a comprehensive, mobile Command, Control and Communications (C3) system for the Playas Training and Research Center (PTRC). The C3 can be transported over land or by air using a semi-truck, sling load by helicopter or C-130 transport, with its own power source, capabilities to send/receive voice communications, capabilities to collect/control information from remote sensors. Additionally, the C3 will support test and training missions at remote locations and can send real-time information to a fixed command center anywhere around the globe.

Item: Multicontinuum Technology for Space Structures
Request: $3,000,000
Account: RDTE, Air Force
Line: 59
PE: 0604857F
Suggested Recipient: LoadPath, LLC
Suggested Location: Albuquerque, NM
Purpose: This funding will focus on the demonstration and validation of Multicontinuum Technology (MCT), a technology that enables optimized application and mission assurance of composite materials. Space system applications utilize composite materials, including Information, Surveillance and Reconnaissance (ISR) and deployable systems. This funding will

assist in practically, accurately, and reliably predicting the damage and strength performance of composite materials in space.

Title: National Consortium for MASINT Research
Request: $15 million
Account: RDT&E,
Line: 4
PE: PE0305880L
Company: Defense Intelligence Agency
Suggested Location: Washington, D.C.
Purpose: The NCMR mission is "to push the technology horizon and bring new research concepts and capabilities to the entire MASINT community". It delivers rigorous peer reviewed research and supports efforts by its chartered members in over 20 states. The NCMR is also a source for new Technical Intelligence Professionals both in and out of government. By creating the NCMR undergraduate scholars program, juniors and seniors at participating universities are receiving merit/need based scholarships that bear fruit in their collective understanding of needs and interest in future intelligence sector employment. This program plays a critical role in the future of technical intelligence and in our nation's security.

Item: New Mexico National Guard Counterdrug Support Program
Request: $6,000,000
Account: Drug Interdiction and Counterdrug Activities
Suggested Recipient: TAG BG Kenny Montoya, New Mexico National Guard
Suggested Location: 47 Bataan Blvd, Santa Fe, NM 87508, 505-474-1200
Suggested Location: Prevent drug trafficking across the New Mexico-Mexico border
Project Description: This year's budget request will have a significant impact on the Guard's ability to support counterdrug activities conducted by U.S. Customs and Border Protection, the Drug Enforcement Agency, the Federal Bureau of Investigation, local law enforcement, and HIDTA Task Forces. With the ongoing drug-related violence in Mexico and the need to increase resources aimed at interdicting the flow of drugs, weapons, and bulk currency being smuggled over the border, the Guard's counterdrug assistance is more important than ever. The Guard's current counterdrug duties include camera surveillance of high traffic border areas, mobile vehicle inspection and dismantlement, vehicle barrier construction, and at-risk school counterdrug education programs.

Item: New Mexico Space Environment Research Clusters
Request: $1.5M
Account: 3600, RDT&E, Air Force
Line: 9 (Applied Research, Space Technology)
PE: 0602601F
Suggested Recipient: University of New Mexico, New Mexico State University, New Mexico Institute of Mining & Technology

Suggested Location: Albuquerque, Socorro, Las Cruces NM

Purpose: To establish research clusters at three NM universities to provide research capability for and a steady flow of qualified job candidates to the Air Force Research Lab Battlespace Environment Division that is being transferred to Kirtland AFB, NM in 2011.

Item: Next Generation Space Processor Radiation Hardened Architecture
Request: $9 million
Account: RDT&E, Air Force
Line: 9
PE: 0602601F
Requestor: Honeywell International
Purpose: To continue development of Next Generation Space Processor to leverage commercial trends in system-on-chip, multi-core, and synthesizable internet protocol, to achieve large performance improvements with significantly less cost.

Item: Off-Grid Power Delivery to the War-Fighter
Request: $4,000,000
Account: RDTE, Army
Line: 18
PE: 0602705A
Suggested Recipient: FlexTech Alliance
Suggested Location: Albuquerque, NM
Purpose: This funding will establish a supply chain for developing devices to harvest and store energy in a format that will meet the needs for U.S. forces which operate in areas where an electrical grid does not exist or cannot be utilized. Achievement of this objective will provide an innovative source of off-grid power and potentially reduce the weight that combatants must carry into the field.

Item: Partnership for Emerging Energy Technologies
Request: $2,000,000
Account: RDTE, Air Force
Line: 4
PE: 0602102F
Suggested Recipient: University of New Mexico
Suggested Location: Albuquerque, NM
Purpose: National energy security will increasingly depend on deployment of new energy technologies. Because of the concentration of materials research targeted to energy applications, PEET is uniquely positioned to contribute to several critical technologies for energy conversion, storage, and power generation. PEET builds on the culture of interdependence of the critical national needs in strategic defense technologies and energy security. Bringing this culture to the field of emerging energy technologies will allow this partnership to coordinate the research missions relevant to DOE and energy security issues important to the DOD. Furthermore, this will be accomplished while building the diverse workforce of the 21st century. Few state initiatives in energy are positioned to accomplish these essential goals.

Item: Phase II: Enhanced Army Regional Energy Testing
Request: $9,000,000
Account: RDTE, Army
Line: 128
PE: 0605602A
Suggested Recipient: White Sands Missile Range
Suggested Location: White Sands, NM
Purpose: This funding will support the stand-up of a regional energy testbed at White Sands Missile Range that will integrate renewable energy technologies, including solar, geothermal, biomass, nuclear, wind and waste-to-energy, into a central storage system that routes the energy to a smart distribution and monitoring system. This long-term plan aligns with the DOD initiative to push its services toward independent energy sources.

Item: Playas Training and Research Center Joint National Training Experiment
Request: $5,000,000
Account: RDTE, Defense-Wide
Line: 174
PE: 0804767D8Z
Suggested Recipient: New Mexico Tech University
Suggested Location: Socorro and Playas, NM
Purpose: This funding will be used to complete the establishment of the Playas Training and Research Center (PTRC) as a Joint National Training and Experimentation Site for Joint Force, including the National Guard Bureau. The focus is to develop facilities, establish training venues, and perform training experiments that will facilitate joint operations between the services and inter-governmental agencies, including state and local governments, during times of emergency, be they human-created or natural disasters. Such mission training can include response to irregular warfare and WMD attacks, emergency management, and civil affairs and peacekeeping missions.

Item: Playas Training and Research Center Small Unmanned Aircraft Systems Program (SUAS)
Request Amount: $3.5 M
Account: DOD, JFCOM, Training Transformation
Line: 174
PE: 0804767D8Z Project Code P759
Suggested Recipient: New Mexico Tech University
Suggested Location: Socorro, NM
Purpose: To establish safety and operational risk assessments for use in establishing standardized Concepts of Operations (CONOPS) and Concept Plans (CONPLANs) for the Group 1 & Group 2 category of SUAS (as defined by the FAA SUAS Aviation Rulemaking Committee, April 2009). These categories are for Micro sized aircraft (less than 2 kilograms gross weight) of SUAS.

Item: Point-of-Care Medical Decision Support Device

Request: $3,200,000
Account: RDTE, Navy
Line: 130
PE: 0604771N
Suggested Recipient: Live BioScience, Inc
Suggested Location: Albuquerque, NM
Purpose: This funding will support a program to merge the minimally invasive micropillar diagnostic platform with the broad sensing capabilities of nanowire-Field Effective Transistors (FETs). This will allow for a capability for diagnostics to be performed using a compact, easy to operate, rapid and reliable sensor platform.

Item: Report Language on Air Borne Platforms for Electric Lasers
Request: NA
Account: NA
Line: NA
PE: NA
Suggested Recipient: NA
Suggested Location: NA
Purpose: The Air Force is proposing to put the DARPA electric laser on a B-1 bomber, the prior program for a chemical laser was on a C-130H platform, there are serious cost implications with using a B-1 platform for tactical lasers, which could propagate into eventual acquisition programs.
Report Language as Follows: The Secretary of Defense shall enter into an agreement with a federally funded research and development center under which the center shall conduct an analysis of the feasibility of integrating solid state laser systems onto C–130, B–1, and F–35 aircraft platforms to provide close air support and estimate the cost per unit of such laser systems and the cost of operating and maintaining each such platform with such laser systems. The report shall be due to the relevant committees no later than March 1, 2011.

Item: Safer MRI Agents for Wounded Soldiers
Request: $4,600,000
Account: RDTE, Defense Health Program
Line: N/A
PE: 0603115HP
Suggested Recipient: Caldera Pharmaceuticals, Inc
Suggested Location: Los Alamos, NM
Purpose: This funding will support the safe and efficient testing of newly discovered MRI contrast agent medicines that are significantly safer than existing contrast agents, which often present considerable issues for patients with poor urinary/renal function. MRI continues to remain a valuable tool for physicians in the field assessing injuries and planning therapies for wounded soldiers. Providing a new contrast agent will mean a safer procedure that retains all of the benefits of this technology.

Item: SkyPure – Water from Air

Request: $2,900,000
Account: RDTE, Army
Line: 13
PE: 0602601A
Suggested Recipient: ICx Technologies, Inc
Suggested Location: Albuquerque, NM
Purpose: This funding will support continued research into technology to harvest drinking water from the humidity in the air using renewable and non-renewable energy sources. Specifically, this funding will allow renewable energy sources, such as solar technology, to be used for harvesting drinking water from ambient air. Continuous supply of fuel is not always possible for the warfighter. Providing adequate quantities of potable water to deployed troops has proven to be extremely costly and a challenging logistics problem in both Iraq and Afghanistan. Minimizing reliance upon foreign fuel sources continues to be a top priority of the DOD.

Item: Smart Instrument Development for the Magdalena Ridge Observatory (MRO)
Request: $6,000,000
Account: RDTE, Navy
Line: 15
PE: 0603114N
Suggested Recipient: New Mexico Tech University
Suggested Location: Socorro, NM
Purpose: This funding will provide continued support to the state-of-the-art observatory being brought online in Socorro, NM. The observatory will develop and sustain smart, advanced instrumentation for imaging space objects, a capability that is increasingly need for the DOD as targets of interest proliferation in near-space orbit. This will come into particular use for space situational awareness (SSA) for the U.S. military.

Item: Space Plasma Research Augmentation
Request: $3,000,000
Account: RDTE, Air Force
Line: 9
PE: 0602601F
Suggested Recipient: Ball Aerospace and Technologies, Corporation
Suggested Location: Albuquerque, NM
Purpose: This funding will equip AFRL's newly acquired Mumbo 2 vacuum chamber with test equipment, specialized vacuum plasma sources, and spacecraft solar cell simulation capacity. The funds will also support transitioning the legacy Mumbo 1 plasma system from its former operational role into a world-class training system.

Item: Spirit Live Fire Impact Area Terrorist Village
Request: $1.0 M
Account: Defense Wide O&M, Special Operations

Line: SRM
PE: NA
Suggested Recipient: Cannon Air Force Base / AFSOC
Suggested Location: Melrose Range, NM
Purpose: Provide a realistic Southwest Asia (Afghanistan) rural hillside village complex for ground forces to assault and conduct close quarters combat supported by fixed/tilt/rotary winged and RPA aircraft conducting Joint Close Air Support, armed over watch, or intelligence/surveillance/reconnaissance (ISR). From vantages point in this complex, these personnel will be able to execute "calls for fire" to actual live fire from fixed/tilt/rotary winged aircraft firing live munitions into Spirit Impact Area which is adjacent to this complex. These aircraft will also be able to conduct dry fires on this village complex jointly or unilaterally. This facility will regularly provide both unilateral and joint training to 27 SOW assigned aircraft/personnel as well as joint SOF partners, particularly for their predeployment rehearsal/certification training. In addition, this facility will contribute to Melrose Air Force Range (MAFR) being accredited as a Joint National Training Center (JNTC) facility, accelerating the increase in the number of ranges available to the joint community for JFCOM exercises such as EMERALD WARRIOR. This complex will be one of MAFR's multiple complexes providing training in different environments for different purposes. This variety of dispersed complexes will enable simultaneous operations enabling greater utilization of MAFR's air/ground space and its utility for complex JFCOM exercises.

Item: Stinger Proximity Fuze
Request: $5,000,000
Account: RDTE, Army
Line: 154
PE: 0203801
Suggested Recipient: Raytheon Company
Suggested Location: Farmington, NM
Purpose: This funding will support the development and manufacturing of proximity fuze technology for the existing Stinger missile. Such a fuze will increase the ability of the Stinger to face new weapons that have come online since the last Stingers were manufactured twenty years ago. The proliferation of UAV technology presents a technology that can significantly disrupt, deter or destroy U.S. operation.

Item: Subterranean Communications Systems for Irregular Warfare Environments
Request: $1,300,000
Account: RDTE, Defense-Wide
Line: 27
PE: 0603122D8Z
Suggested Recipient: Stolar Research Corporation
Suggested Location: Raton, NM
Purpose: This funding will provide for the advanced development and testing of a state-of-the-art, low-frequency, narrow-band communications system capable of operating in subterranean environments. The inability of warfighters to communicate in irregular warfare environments exposes them to unnecessary risks and limits operational options. The underlying technology is an extension of existing work that met a need for emergency communications following an in-mine accident.

Item: Survival, Evasion, Resistance, and Escape (SERE) Urban Training Area
Request: $1.5 M
Account: Defense Wide O&M, Special Operations
Line: SRM
PE: NA
Suggested Recipient: Cannon Air Force Base / AFSOC
Suggested Location: Melrose Range, NM
Purpose: Provide a realistic urban complex for joint personnel (aircrew and ground personnel) to conduct SERE training. This facility will regularly provide both unilateral training to 27 SOW assigned personnel and joint training to its SOF partners and other members of the joint community. In addition, this facility will contribute to Melrose Air Force Range (MAFR) being accredited as a Joint National Training Center (JNTC) facility, accelerating the increase in the number of ranges available to the joint community for JFCOM exercises such as EMERALD WARRIOR. This complex will be one of MAFR's multiple complexes providing training in different environments for different purposes. This variety of dispersed complexes will enable simultaneous operations enabling greater utilization of MAFR's air/ground space and its utility for complex JFCOM exercises.

Item: ThreatSense – CBR Threat Protection for Critical DOD Infrastructure
Request: $4,000,000
Account: RDTE, Defense-Wide
Line: 34
PE: 0603384BP
Suggested Recipient: ICx Technologies, Inc
Suggested Location: Albuquerque, NM
Purpose: This funding will support continued development of BioSparQ, technology designed to detect and identify biological pathogens and toxins (bio-threat agents) which could be utilized as weapons of mass destruction. Existing DOD mission requirements necessitate that

the current technology be altered to minimize the cost, size and weight of the units. Currently fielded technology requires burdensome inventory and tracking due to liquid reagents used. BioSparQ is a reagentless technology and would provide an extended shelf-life for use by the soldier in the field.

Item: TOW LBS (Launch Boost Sustain)
Request: $5,000,000
Account: RDTE, Army
Line: 163
PE: 0203802
Suggested Recipient: Raytheon Company
Suggested Location: Farmington, NM
Purpose: This funding will provide for studies to analyze and mature the technologies necessary to modernize TOW, consistent with the Amy's requirements for incremental improvement of the missile system. Three technology areas will be developed in parallel to support flight demonstration and qualification: airframe design/fabrication, rocket motor development, and launcher modifications. TOW is the only joint (US Army/USMC) multi-mission precision heavy assault/anti-armor weapon system currently fielded. The United States has more than 6000 TOW launchers in inventory with about 600 TOW missiles in each Infantry Brigade Combat Team. The TOW weapon system is currently being used effectively in Iraq and Afghanistan for long-range precision engagements and more than 10,000 missiles have been fired in these theaters. An industry-funded initiative has confirmed the value of a launch, boost, sustain motor which would extend range and reduce time to target by six to eight seconds, enhancing gunner survivability. Incremental improvements of TOW are critical if the system is to keep ahead of threats and exceed the capabilities of foreign systems.

Item: Triad Phase III
Request: $2,000,000
Account: RDTE, Army
Line: 137
PE: 0605602A
Suggested Recipient: White Sands Missile Range
Suggested Location: White Sands, NM
Purpose: This funding, directed toward White Sands Missile Range (WSMR), Ft. Bliss and Holloman Air Force Base (HAFB), will provide essential tools to facilitate scheduling, coordinate de-conflication of air, land and frequency assets, and coordinate real-time test and training missions. The existing Regional Partnership between the three military installations was established to more effectively and efficiently manage the region's land, air and frequency domains in anticipation of the substantial growth in operational tempo for the area.

Item: TRIOS, Technology Research & Innovation Outreach for Space
Request Amount: $3.0M
Account: 3600, RDT&E, Air Force
Line: 9 (Applied Research, Space Technology)

PE: 0602601F
Suggested Recipient: Technology Ventures Corporation (TVC)
Suggested Location: Albuquerque, NM, 87106,
Purpose: To expand the number of private sector companies and universities participating in New Mexico's growing high-tech, small satellite, space industry and to promote workforce development to support this growing industry.
Project Description: The expanded industry, academic, and workforce base will directly benefit the DoD space organizations at Kirtland Air Force Base; the Air Force Research Lab Space Vehicles and Directed Energy Directorates, the Operationally Responsive Space Office, and the Space Development and Test Wing; by providing ready access to innovative vendors and well-qualified scientists, engineers, and technicians. This will expedite the development and launch of the new small, lower cost, responsive space systems required to support DoD's numerous and rapidly changing war fighter missions around the world.

Item: Tunnel Detection/Mitigation Facility
Request: $5,000,000
Account: RDTE, Defense-Wide
Line: 27
PE: 0603122D8Z
Suggested Recipient: New Mexico Tech University
Suggested Location: Socorro, NM
Purpose: This funding will provide for an operational subterranean tunnel in a semi-arid rough terrain that can provide a location for testing of detection equipment. The use of tunnels is an increasing threat in-theater for the warfigher, and providing equipment to assist in detection is necessary to ensure mission success and force protection. NMTech is uniquely situated to provide a location for a testing tunnel, and has already been the location of testing for equipment for state government and the National Guard.

Item: Universal Personal Tracker (UPT)
Request: $3,800,000
Account: RDTE, Defense-Wide
Line: 263
PE: 1160476BB
Suggested Recipient: United International Engineering, Inc
Suggested Location: Albuquerque, NM
Purpose: This funding will further develop the Universal Personal Tracker (UPT), technology that is rugged, waterproof, hand-held and which provides situational awareness and networking capability to the soldier in the field. Through the compilation of information and date into a single source and along a secure connection, UPT allows soldiers to remain constantly information of necessary information without resorting to large, burdensome equipment. The Office of Naval Special Warfare is interested in the program and has acknowledged its capability and need.

Item: University Strategic Partnership (USP)

Request: $5,000,000
Account: RDTE, Defense-Wide
Line: 20
PE: 0602718BR
Suggested Recipient: University of New Mexico
Suggested Location: Albuquerque, NM
Purpose: This funding will promote projects at universities in cooperation with divisions throughout the Defense Threat Reduction Agency (DTRA). DTRA is pursuing several strategic research and development campaigns critical to national security that foster numerous opportunities for initiatives in biotechnology, materials sciences, situational awareness, infectious diseases, radiation detection, and medical sciences. The program engages faculty and students toward first-hand research on national security issues that ultimately benefits DTRA's mission.

Item: Urban Training Area
Request: $1.0 M
Account: Defense Wide O&M, Special Operations
Line: SRM
PE: NA
Suggested Recipient: Cannon Air Force Base / AFSOC
Suggested Location: Melrose Range, NM
Purpose: Provide a realistic urban environment complex for ground forces to assault and conduct close quarters combat supported by fixed/tilt/rotary winged and RPA aircraft conducting Joint Close Air Support, armed over watch, or intelligence/surveillance/reconnaissance (ISR). In addition to ground personnel being able to execute integrated joint dry "calls for fire" with actual aircraft from vantages point in this complex, aircraft will be able to execute similar training unilaterally. This facility will regularly provide both unilateral and joint training to 27 SOW assigned aircraft/personnel as well as joint SOF partners, particularly for their predeployment rehearsal/certification training. In addition, this facility will contribute to Melrose Air Force Range (MAFR) being accredited as a Joint National Training Center (JNTC) facility, accelerating the increase in the number of ranges available to the joint community for JFCOM exercises such as EMERALD WARRIOR. This complex will be one of MAFR's multiple complexes providing training in different environments for different purposes. This variety of dispersed complexes will enable simultaneous operations enabling greater utilization of MAFR's air/ground space and its utility for complex JFCOM exercises.

Item: WaterSentinal – Safe Water Anywhere
Request: $2,800,000
Account: RDTE, Army
Line: 13
PE: 0602601A
Suggested Recipient: ICx Technologies, Inc
Suggested Location: Albuquerque, NM

Purpose: This funding will enhance the capability to monitor potable and industrial-use water board military bases and stations for hazardous, biological and chemical content and ensure that current treatment processes are operating properly. Real time monitoring of drinking water is currently a costly and time consuming process requiring reagents, other consumables, and on-site laboratory capabilities. This new capability will improve water safety and decrease filtration consumable costs for our troops.

JEFF BINGAMAN
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United States Senate

March 5, 2010

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

The Honorable John McCain
Ranking Member
Senate Armed Services Committee
228 Russell Senate Office Building
Washington, DC 20510

Dear Chairman Levin and Ranking Member McCain:

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 request for inclusion in the National Defense Authorization Act for Fiscal Year 2011.

Sincerely,

Jeff Bingaman
U.S. Senator