DEPARTMENT OF THE AIR FORCE

PRESENTATION TO THE HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON EMERGING THREATS AND CAPABILITIES

U.S. HOUSE OF REPRESENTATIVES

29 February, 2012

SUBJECT: Fiscal Year 2013 Air Force Science and Technology

STATEMENT OF: Dr. Steven H. Walker, SES
Deputy Assistant Secretary
(Science, Technology and Engineering)

NOT FOR PUBLICATION UNTIL RELEASED BY
HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON EMERGING THREATS AND CAPABILITIES
U.S. HOUSE OF REPRESENTATIVES

INTRODUCTION

Mr. Chairman, Members of the Subcommittee and Staff, I am pleased to have the opportunity to provide testimony on the Fiscal Year 2013 Air Force Science and Technology (S&T) Program.

To protect our nation amidst a myriad of current and future security challenges, the Air Force must be an agile, flexile, ready and technologically-advanced part of the Joint team. The Air Force S&T Program plays a vital role by creating compelling air, space and cyberspace capabilities for precise and reliable global vigilance, reach and power.

Directed by Air Force senior leadership, our S&T Program is based on several enduring tenets. First, we must prepare for an uncertain future and investigate game-changing technologies to affordably transition the art-of-the-possible into military capabilities. To support the Air Force Service Core Functions, we must create technology options across a wide spectrum ranging from institutionalizing irregular warfare capabilities to providing new capabilities to operate effectively in cyberspace and across all domains. We must demonstrate advanced technologies that address affordability by promoting efficiencies, enhancing the effectiveness, readiness, and availability of today's systems, and addressing life cycle costs of future systems. In keeping with our Service heritage, we must continue to foster an appreciation for the value of technology as a force-multiplier throughout the Air Force. We must maintain the requisite expertise to support the acquisition and operational communities and modernize and improve the sustainability of unique research facilities and infrastructure. Finally, we will leverage and remain vigilant over global S&T developments and emerging capabilities to avoid technological surprise and exploit art-of-the-possible technologies for our military advantage.

To accomplish this in a constrained fiscal environment, it is critical that we make the wisest investment decisions possible with the precious taxpayer resources afforded us. We've used this

opportunity as a catalyst to holistically examine our S&T portfolio by considering several fundamental questions guided by our tenets. Where should the Air Force lead the Department of Defense (DoD) from a technology development perspective? Where should we be an integrator of technologies developed by others, and where should we follow the pace of technology being led by our sister Services, other agencies, academia, or Industry?

Recognizing that wise investments are rooted in sound strategies, we embarked more than a year ago on the deliberate and collaborative development of an S&T Strategy, which I introduced to you in my testimony last year. This strategy, which codified our enduring tenets and current overarching priorities, led to the creation of an S&T Plan, published in June 2011. This capstone document describes how the Air Force Research Laboratory (AFRL) implements the Air Force S&T Strategy.

In light of the defense strategic guidance released last month, we ensured our current strategies and plans were appropriately aligned with new and enduring emphasis areas. Our S&T Program supports the Air Force capabilities fundamental to the major priorities of the guidance, such as deterring and defeating aggression, projecting power in anti-access and area denial (A2/AD) environments, operating in the space and cyberspace domains, and maintaining a safe, secure and effective strategic deterrent. Our Air Force S&T Strategy, along with the defense strategic guidance, provided valuable vectors and helped the Air Force make some very challenging investment decisions.

AIR FORCE S&T FISCAL YEAR 2013 PRESIDENT'S BUDGET REQUEST

The Air Force Fiscal Year 2013 President's Budget request for S&T is approximately $2.2 billion, which includes nearly $200 million in support of devolved programs consisting of High Energy Laser efforts and the University Research Initiative. These investments support a robust and balanced foundation of basic research, applied research, and advanced technology development that

will provide demonstrated transition options to support future warfighting capabilities. This year's budget request represents a decrease of $64 million or a 2.8 percent reduction from the Fiscal Year 2012 President's Budget request. This reflects a more modest reduction than that taken across the total Air Force budget and indicates the strong support for Science and Technology from our leadership in this challenging fiscal environment.

Within the S&T portfolio, significant adjustments were made to focus investments in the most promising technologies to develop future warfighting capability. The most dramatic adjustment is an increase of $55 million in our propulsion portfolio in support of new DoD emphasis on A2/AD and energy savings. We were able to maintain stable investments in basic research, directed energy, munitions, and human effectiveness technology areas. Based on our strategy, we reduced our investments in airborne active denial, strategic relay mirrors, and high speed laser communications development in the directed energy portfolio and laser threat warning and small remotely piloted aircraft sensing technologies in the sensors technology portfolio. Finally, we are divesting our investment in deployed airbase technology development and thermal sciences technologies. In these and other technology investment areas, we shifted investment priorities in order to best deliver on our strategic priorities. I will highlight some of these adjustments later in my testimony.

AIR FORCE S&T PROGRAM PRIORITIES

The Air Force S&T Fiscal Year 2013 President's Budget request supports the following overarching priorities that are detailed in our Air Force S&T Strategy document.

Priority 1: Support the Current Fight While Advancing Breakthrough S&T for Tomorrow's Dominant Warfighting Capabilities

Developing technologies to equip our forces of tomorrow is the primary objective of any S&T portfolio. Yet, our dedicated scientists and engineers are equally motivated to contribute to

the current fight by getting their technologies into the hands of our warfighters today. The dollars spent in these near-term investments will undoubtedly pay dividends in the long term. I'd like to share with you a few examples of irregular warfare capabilities that were enabled by our broad S&T investments of the past.

Air Force S&T has played a significant role in developing and delivering combat capability to our warfighters engaged in the United States Central Command (CENTCOM) Area of Responsibility through the deployment of Blue Devil. Blue Devil Block 1 is a persistent intelligence, surveillance, and reconnaissance (ISR) capability demonstrating the first-ever integration of wide area field-of-view and narrow field-of-view high definition day and night sensors cued by advanced signals intelligence sensors. Imagery is transmitted in near-real-time to a Blue Devil ground station or to individual soldiers on the ground. Blue Devil Block 1 satisfies a number of CENTCOM Joint Urgent Operational Needs. Warfighter feedback on the situational awareness provided by Blue Devil Block 1 has been overwhelmingly positive. Since December 2010, Blue Devil ISR has been instrumental in identifying a number of high value individuals and improvised explosive device emplacements. In Fiscal Year 2013, Blue Devil Block 1 will continue to support CENTCOM with four sorties per day.

We also transitioned the Internet Relay Chat Coordinate Extractor, or ICE for short, to the Air Force Distributed Common Ground System program for integration. This capability was created at the request of the Director for ISR Innovations and Unmanned Aircraft System Task Force. ICE is a software application that monitors operational chat rooms for geospatial coordinates and automatically plots those locations on various map programs with greater than 99 percent accuracy. In operation, it has reduced the workload of remotely piloted aircraft operators and improved both Predator and Reaper crew situational awareness and response to time-critical events.

At the request of the 497th ISR Group to address human threat understanding and awareness needs, we demonstrated near-term technologies that provide Air Force Distributed Common Ground System analysts a way to familiarize, understand, and recognize humans from full motion video. This technology provides a solution for the challenging ground target problem. As a result of the demonstration, the customer is working to get the technology transitioned to the Air Force Distributed Common Ground System weapon system.

In response to an urgent operational need for high-resolution three-dimensional data, AFRL partnered with Northrop Grumman, Johns Hopkins University Applied Physics Laboratory, Defense Advanced Research Projects Agency (DARPA), NASA, and the Army Geospatial Center to develop, test, and deploy the High Altitude Lidar Operational Experiment (HALOE) system to the Afghanistan Theater. The Geiger-mode avalanche photodiode focal plane array, developed by AFRL, was the enabling technology that made this system possible. The unprecedented sensitivity, accuracy, and speed of this array allowed in-flight mapping operations at ranges, scan rates, and altitudes several orders of magnitude greater than anything currently fielded today. HALOE is an example of a long-term technology investment for military applications brought to bear to meet irregular warfare needs. This system flew over 550 operational flight hours in 140 sorties while collecting over 55,000 square kilometers of data at an unprecedented 20-centimeter resolution. Working closely with both on-site and geographically separated exploitation teams, HALOE answered over 200 requests for information. Exploited HALOE data has directly supported operations against high value individuals and ongoing combat operations through the characterization of compounds, helicopter landing zones, traffic density and line-of-sight analysis. Following these successes, HALOE has been transitioned to the Army Geospatial Center and was redeployed in 2011 for an additional 12 months.

Priority 2: Execute a Balanced, Integrated S&T Program that is Responsive to Air Force Service Core Functions

Maintaining a balanced, integrated S&T program presents many challenges. As I mentioned earlier, it was necessary for us to take a fresh look at the entire S&T portfolio in light of the defense strategic guidance and re-evaluate our investment in certain areas. It was equally important to determine if there were areas of investment we needed to initiate or increase.

This "clean-slate" approach resulted in decisions to divest of Air Force investment in a number of technology areas, some of which I'll detail here. We moved our space technology portfolio away from "plug and play" satellites while increasing the portfolio in the area of space communications. In the directed energy portfolio, we reduced our investments in airborne active denial, strategic relay mirrors, and high speed laser communications development. In the sensors technology area, we reduced laser threat warning and small UAS sensing technologies. In the air vehicles area we terminated research efforts directed toward micro unmanned air vehicles. Finally, we are divesting our investment in deployed airbase technology development and thermal sciences technologies.

We appreciate Congress appropriating full funding of the Fiscal Year 2012 space S&T lines. However, due to reductions in the Fiscal Year 2013 Air Force budget we had to reduce the overall space S&T portfolio. The space S&T budget was re-aligned with current Air Force Space Command and Space and Missile Systems Center priorities. For example, space-based communication and precision, navigation, and timing technologies were emphasized to improve affordability and reliability. Space situational awareness (SSA) research using ground-based optical systems was increased to provide a better understanding of satellite location, properties, and health, as well as locating potential threats. Most of this research takes place at the Starfire Optical Range and the Maui Space Surveillance System. These sites include the two DoD 3.5-meter class

telescopes that can track fast moving satellites in low earth orbits. Air Force S&T provides significant SSA data to the Joint Space Operations Center in accomplishing its mission to detect, track, and identify all man-made objects in Earth orbit. The most important elements of the Space Superiority portfolio were maintained.

Another area where we made reductions was within our information portfolio, decreasing efforts in command and control and decision-making tools. However, we maintained research efforts in cyber operations, defense, and resiliency consistent with the defense strategic guidance.

One new initiative in this area is the stand-up of an Electronic Warfare Quick Reaction Capability to rapidly assess pilot electronic warfare solutions to warfighters, including the cyber dimension of electronic warfare. This effort will include electronic warfare experiments, modeling and simulation, and both hardware- and software-in-the-loop capabilities to conduct assessments of next generation electronic warfare and integrated air defense system threats.

As we begin the transition to 5th generation aircraft, the Fiscal Year 2013 President's Budget request significantly increases emphasis on applied research to support conventional weapon technologies with the explicit goal of enhancing the capability and capacity of these aircraft, specifically to increase their effectiveness in A2/AD environments. Technologies across the conventional weapon spectrum, including robust munition navigation and control, terminal precision guidance, damage mechanisms, energetic materials, and modeling and simulation, will all contribute to mature selected technologies that enable innovative munition concepts for these aircraft.

We believe speed is important to the success of future Air Force long range precision strike missions for anti-access/area denial environments. To that end, we are exploring the right balance between speed, signature, and electronic warfare to ensure our capability options for the most stressing environments. We are planning to initiate a technology demonstration effort in Fiscal

Year 2013 to demonstrate a high speed capability option. If successful, this High Speed Strike Weapon technology demonstration will be representative of an air-breathing hypersonic missile system with the capability to engage fixed and relocatable targets at extended ranges and survive the most stringent environments presented to us in the next decade. Key technologies to be developed in the first phase of this effort include air-breathing hypersonic engines; advanced materials and structures; guidance, navigation and control for GPS degraded and denied environments; advanced sensors and seekers; and selectable effects warheads. Note that the Department's Conventional Prompt Global Strike program is developing related technologies, but would provide distinctly different capabilities than this effort.

The Supersonic Turbine Engine for Long Range (STELR) demonstration will provide the foundation for a revolutionary increase in capability for cruise missile weapon systems. The purpose of this program is to bring critical key technologies to a readiness level sufficient for transition to a new cruise missile. The planned engine demonstrations, under contract as of December 2011, will take about 34 months to complete in two phases. Phase 1 will be an evaluation of the design and assessment of new and existing hardware to meet the STELR objectives. Phase 2 will consist of two major tests to demonstrate durability, operability, and performance characteristics of the engine technologies, anticipated to be conducted in 2013. The STELR program will allow for technology options for a Long Range Stand-off Missile.

Another initiative is the Identification at Range Integrated Sensor (IRIS), a synthetic aperture Laser Radar (LADAR) program that seeks to provide target identification through geometric imaging at ranges and resolutions exceeding the geometric imaging limits of conventional apertures. The IRIS program builds on the success of the previous Synthetic Aperture LADAR for Tactical Imaging (SALTI) program which the Air Force executed for DARPA. SALTI demonstrated the first Synthetic Aperture LADAR images from an airborne platform but at limited

range. The IRIS will demonstrate Synthetic Aperture LADAR imaging at operational ranges by developing key components, techniques, and algorithms to allow high resolution image formation at long range through degraded atmospheres. The technology promises to provide users the capability of accurately characterizing ground platforms, vehicles, and structures as friendly, noncombatant, or hostile. Additionally, it will identify platform/target type to the extent that high-confidence, real-time application of tactical resources could occur within the rules of engagement. The IRIS architecture is also capable of engaging air targets at extended ranges, making the technology applicable to a variety of combat platforms, including the F-35 Joint Strike Fighter.

We are developing game-changing directed energy technologies for the future warfighter. In the Counter-Electronics High Power Microwave Advanced Missile Project, or CHAMP, Joint Capability Technology Demonstration (JCTD) effort, significant progress has been made in demonstrating airborne electronic attack capability. We have completed two ground effects tests demonstrating high power microwave effectiveness against five classes of electronic targets; performed missile live fire showing the ability to navigate, aim, and trigger inert payload; and successfully integrated the inert system into a B-52 aircraft. We are also reducing the size and weight of high power microwave components while increasing the range for counter-electronics attack.

In the human effectiveness portfolio, we are starting work in aerospace physiology and toxicology to develop physiological and cognitive models to predict operator performance in combined high-gravitational force, high altitude, and stressing environments characteristic of 5th generation air superiority aircraft. This research will also investigate and establish toxicity impacts to the body of advanced fuels, materials, and chemicals used to support existing and future weapon systems.

Starting in Fiscal Year 2013, the Air Force is making additional investments in autonomy initiatives. These include technologies to improve the performance of the human analyst, as well as to provide autonomous control for unmanned platforms in contested environments. This initiative will also develop extended capabilities for groups of cooperating platforms with humans in the loop. We're continuing breakthrough basic research in artificial photosynthesis where our work was recognized on the *Time Magazine* List of Best Inventions for 2011. Researchers we funded at the Massachusetts Institute of Technology developed a device to harness solar energy by splitting water molecules. The researchers produced devices that combine a standard silicon solar cell with a catalyst developed three years ago by Professor Daniel Nocera. When submerged in water and exposed to sunlight, the devices cause bubbles of oxygen to separate out of the water. If a catalyst could produce fully formed hydrogen molecules, the molecules could be used to generate electricity or to make fuel for vehicles. Ultimately, the goal is to produce a low-cost device that could be used where electricity is unavailable or unreliable.

In the area of reducing energy dependency, last year I mentioned the Adaptive Versatile Engine Technology (ADVENT) program which is developing multi-design-point engine technologies that will provide optimized fuel efficiency of up to 25 percent and performance capabilities over a wide range of flight regimes. Building upon the ADVENT program, Fiscal Year 2013 funds will provide for the preliminary design of an adaptive engine technology development (AETD); risk reduction of critical engine components; maturation of an engine core; sub-scale and full-scale ground rig and engine testing; and analysis of uninstalled and installed engine performance. AETD technologies are expected to improve fuel efficiency, durability, and thrust performance for a wide range of air vehicles and applications. Fuel efficiency buys range in combat; therefore, this engine development will also increase un-refueled range for several platforms engaging in A2/AD environments. This preliminary design work and the associated

activities will enable follow-on final design, engineering manufacturing development, and ground and flight test qualification of a production-ready engine early in the next decade for integration into legacy and future aircraft systems. This investment will also help maintain a competitive industrial base in turbine engine technology, an area critical to our future military capability.

Priority 3: Retain and Shape the Critical Competencies Needed to Address the Full Range of S&T Product and Support Capabilities

Ensuring the Air Force continues to have war-winning technology requires careful and proactive management of our Science, Technology, Engineering, and Mathematics (STEM) workforce. We are working alongside the other Services to increase the nation's supply of STEM talent, and to improve our means to attract and recruit future innovators for the Air Force. We must access our nation's best and brightest, and equip them through both the education and training needed for success. In March 2011, the Air Force published *Bright Horizons*, a STEM workforce strategic roadmap that will position the Air Force to ensure we have the right STEM skill sets in place to maintain technological dominance of the air, space, and cyberspace domains. We are identifying current and future STEM workforce requirements, developing strategies to address any workforce gaps, and developing methods to measure for success. We also established an Air Force-level STEM office to coordinate our outreach activities. The Air Force conducts over 150 STEM engagements each year, ranging from scientists and engineers volunteering to judge science fairs to the National Defense Science and Engineering Graduate Program providing scholarships to STEM students. These engagements encourage and leverage local, state, and federal STEM activities, affecting hundreds of thousands of students and teachers across the nation. Our new outreach office will allow us to improve coordination with other Service and agency STEM programs and give us a better understanding of the effectiveness and impact of our STEM investments.

Priority 4: Ensure the Air Force S&T Program Addresses the Highest Priority Capability Needs of the Air Force

Our process for creating and executing Air Force Flagship Capability Concepts (FCCs) is maturing well. Last year I told you about these newly established Air Force-level integrated technology demonstration efforts. Key factors in commissioning an FCC include having a well-defined scope and specific objectives desired by a Major Command (MAJCOM). The technologies are matured by AFRL with the intent to transition to the acquisition community for eventual deployment to an end user. These FCCs are sponsored by the using command and are vetted through the S&T Governance Structure and Air Force Requirements Oversight Council to ensure they align with Air Force strategic priorities.

The High Velocity Penetrating Weapon FCC was established to demonstrate critical technologies to reduce the technical risk for a new generation of penetrating weapons to defeat difficult, hard targets. The ultimate goal is to demonstrate 5,000-pound-class weapon penetration capability in a 2,000-pound-class weapon. Since last year we successfully completed the first ground-based test to assess the survivability of the warhead design. Data from this test and planned tests in the future will continue to reduce critical technology risks and inform Air Combat Command and the Air Armament Center as they progress toward a Materiel Development Decision for a proposed Hard Target Munition acquisition program.

The Air Force decommissioned the Responsive Reusable Boost for Space Access FCC during our annual review of its progress. Due to current fiscal realities, Air Force Space Command was no longer able to commit to the transition of these technologies according to the planned timeline. AFRL continues to explore advanced structures and subsystems technologies and is working toward a reusable hydrocarbon-fueled engine technology demonstrator.

We commissioned a new FCC for Precision Airdrop in response to a request from the Commander of Air Mobility Command for technologies to improve airdrop accuracy and effectiveness while minimizing risk to our aircrews. AFRL, the Aeronautical Systems Center, and Air Mobility Command members established a working group to explore all aspects of the airdrop missions from re-supplying our warfighters in the field to providing humanitarian aid to people in need across the globe. This team, with valuable support and participation from the Army, spent several months investigating the myriad of challenges associated with each of the different types of airdrop missions. They identified multiple technologies which may reduce the error associated with airdrops and put forward the most promising set. Technologies that will be developed for potential transition include a forced exit delivery system, bundle tracking, more precise methods of wind sensing, and a humanitarian airdrop delivery system that will deliver aid without putting local populations at risk.

The Selective Cyber Operations Technology Integration (SCOTI) FCC is executing smoothly toward providing cyber technologies capable of affecting multiple nodes for the purposes of achieving a military objective. The standardized delivery platform being developed is scheduled to be complete in Fiscal Year 2013 and will serve as a baseline for current and future integrated cyber tools.

To ensure these FCCs and other advanced technology development efforts are postured for successful transitions to warfighting capability, the Air Force is continuing deliberate efforts to better align S&T planning, technology transition planning, and development planning. The linkages between these planning activities are critical to initiating acquisition programs with more mature technologies and credible cost estimates, and we are mandating this linkage in new Air Force policy.

The Air Force S&T planning process is driven by S&T needs identification and S&T solutions formulation in response to documented capability needs provided by the MAJCOMs. Capability Collaboration Teams conduct systems engineering decompositions to determine if S&T is required to address Product Center technology needs in support of the documented MAJCOM capability needs. These teams include subject matter expert representatives from the MAJCOM, appropriate Product Center, and AFRL. The output is a set of vetted MAJCOM prioritized S&T needs based upon critical technologies required for ongoing or prospective materiel solutions supporting documented MAJCOM capability needs. Following S&T needs identification, the teams identify and vet potential S&T solutions mapped to MAJCOM capability needs by mission area. Recommended S&T solutions become internally managed AFRL S&T projects, or are proposed as candidate Advanced Technology Demonstrations (ATDs), FCCs, or JCTDs that require approval by their respective governing bodies. Integrated Product Teams are established for transition planning. Additionally, AFRL is conducting early systems engineering activities in all major technology demonstration efforts, and documenting aspects of these activities in baseline documents. AFRL has established a Chief Engineer position in the Headquarters and in each of the Technical Directorates to lead these activities.

Air Force S&T activities must support, and are informed by, development planning efforts. S&T communities identify technology maturity as well as opportunities (e.g., the "art of the possible") to inform the formulation and consideration of candidate concepts. Development planning communities identify technology needs and technical risk areas of candidate concepts to inform S&T planning. Finally, the Air Force conducts the necessary development planning activities to transition ATDs, FCCs, and Air Force-led JCTDs into acquisition programs.

Another way we address the highest priority capability needs is by recognizing that industry is a critical partner in advancing technologies and delivering war-winning capabilities. To better

inform and leverage the work of our industry partners, we have developed a new process to collaborate on Industry Independent Research and Development (IR&D) projects. We completed our first review using this process toward the end of 2011. Senior Air Force leadership was pleased with the products and processes and requested a second IR&D review which we are currently conducting. These reviews have dramatically increased Air Force insight into industry IR&D portfolios, leading our researchers to establish contacts with the reviewed companies and consider collaboration opportunities. Equally important, our first review led industry researchers to request follow-up meetings with the Air Force to ensure their portfolio is aligned with our needs. We believe this new process will help advance the "state-of-the-art" in the technologies of greatest need to the Air Force while helping industry make smart in-house research investment decisions. The end result is maximizing return on investment for both the government and industry.

I would also like to provide some feedback on how the Air Force is engaging with small business to execute the Rapid Innovation Fund (RIF). The Air Force received 730 white papers in response to the RIF broad agency announcement, 88 percent of which were submitted by small businesses. We assembled a team of over 85 evaluators from across the Air Force. One hundred thirteen white papers valued at $253 million were scored in the top category, defined as a small business meeting a critical need with a clear transition path to a major acquisition program.

The Air Force asked submitters to focus on key technology areas in their white papers. These included support to current contingency operations, particularly in the areas of precision air delivery, low-metal or non-metallic detection devices, persistent wide-area airborne surveillance and exploitation capability, combat search and rescue, and man-portable fire suppressant. We also asked for ideas in cyberspace superiority and mission assurance, improved system sustainment, and power generation and energy for platforms.

In addition to the technical approach and cost, a primary consideration in our evaluation of white papers was transition potential. We also considered the degree to which the technical approach was relevant to our need, whether it enhances or accelerates the development of an Air Force capability, and if it reduces development costs of acquisition programs or sustainment costs of fielded systems. We approved 20 white papers and have invited those vendors to submit a proposal in competition for the $24 million. We anticipate making approximately 12 awards for this initial phase of the RIF program.

CONCLUSION

This budget request reflects our re-focused S&T portfolio given budgetary challenges and the new defense strategic guidance. I believe this request also reflects the promise of future warfighting capability enabled by the technologies that will be developed with this investment. We recognize that these challenges will not disappear tomorrow, and that is why we've improved our processes to make better investment decisions and to capitalize on these investments to efficiently deliver capability to our warfighters. We're institutionalizing these initiatives in our policies and procedures across the Air Force. The S&T portfolio we present to you today, after all, is the genesis of our warfighting capability of tomorrow. Our Airmen and our nation are depending on it!

Mr. Chairman, thank you again for the opportunity to testify today and thank you for your continuing support of the Air Force S&T Program.