SUBCOMMITTEE HEARING ON THE ROLES OF FEDERAL LABS IN SPURRING INNOVATION AND ENTREPRENEURSHIP ACROSS THE U.S.

HEARING

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CONTENTS

OPENING STATEMENTS

	Page
Nye, Hon. Glenn	1
Schock, Hon. Aaron	2

WITNESSES

Lee, Ms. Cynthia, Associate Director, Langley Research Center, National Aeronautics and Space Administration	4
Underwood, Mr. Bruce, Technical Manager, Wallops Space Flight Facility, National Aeronautics and Space Administration	6
Sebesta, Mr. Paul G., Center Director, National Center for Agricultural Utilization Research, USDA Agricultural Research Service, Peoria, Illinois	8
Seywald, Dr. Hans, President, Analytical Mechanics Associates, Inc., Hampton, Virginia	10
Suber, Mr. Chris, President, Construction Development Services, Inc., Norfolk, Virginia	12
Johnsen, Mr. Peter B., Chief Technology Officer, Biofuels Manufacturers of Illinois, LLC, Peoria, Illinois	13

APPENDIX

Prepared Statements:

Nye, Hon. Glenn	22
Schock, Hon. Aaron	24
Lee, Ms. Cynthia, Associate Director, Langley Research Center, National Aeronautics and Space Administration	27
Underwood, Mr. Bruce, Technical Manager, Wallops Space Flight Facility, National Aeronautics and Space Administration	27
Sebesta, Mr. Paul G., Center Director, National Center for Agricultural Utilization Research, USDA Agricultural Research Service, Peoria, Illinois	31
Seywald, Dr. Hans, President, Analytical Mechanics Associates, Inc., Hampton, Virginia	38
Suber, Mr. Chris, President, Construction Development Services, Inc., Norfolk, Virginia	41
Johnsen, Mr. Peter B., Chief Technology Officer, Biofuels Manufacturers of Illinois, LLC, Peoria, Illinois	43

SUBCOMMITTEE ON CONTRACTING AND TECHNOLOGY HEARING ON THE ROLES OF FEDERAL LABS IN SPURRING INNOVATION AND ENTREPRENEURSHIP ACROSS THE U.S.

Thursday, September 24, 2009

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON SMALL BUSINESS,
Washington, DC.

The Subcommittee met, pursuant to call, at 12:45 p.m., in Room 2360, Rayburn House Office Building, Hon. Glenn Nye [chairman of the Subcommittee] presiding.

Present: Representatives Nye, Ellsworth, and Schock.

Chairman NYE. Thank you all for being here. Our apologies for getting started a little bit late. We had a vote called right about at the beginning of the hearing time. The good news is that we only had one more vote today, and that was it, so we won't be interrupted again.

What I would like to do is go ahead and call this hearing to order. And I am going to read an opening statement, and then I am going to provide an opportunity for the ranking member of the Committee to make any remarks he would like to make and then give you all an opportunity to make your statements. And, again, pleased to have you here today.

Small businesses are the most innovative sector of our economy. Not only are they responsible for some of the most important technological breakthroughs of the past century, but they are also going to be responsible for 60 to 80 percent of the new jobs as they drive our economy to recovery.

One of the most successful ways we have to help support the growth of innovative small businesses is through partnerships with Federal labs and research facilities. Last year, small businesses won 4,000 contracts through USDA Federal research facilities, amounting to over $100 million. Meanwhile, NASA awarded an additional 2,500 small business contracts, totaling $400 million. All told, fiscal year 2008 saw a $143 billion investment in research and development.

At face value, these are significant investments, the kind that go a long way to spark innovation. But the benefits don't just stop at the laboratory door. Rather, they go on to support regional economies through job creation and product commercialization.

In today's hearing, we will examine the role that Federal labs play in local markets and the support they provide entrepreneurs nationwide. We will also look for ways to ensure that procurement policies continue to work for small firms and that promising research makes its way from the laboratory to the marketplace.

In local economies across the country, Federal labs have brought tremendous growth. In Hampton Roads and on Virginia's eastern shore, NASA labs sustain roughly 11,000 jobs and generate a billion dollars in economic output each year. At the national level, the impact of these facilities is also significant. Every year, the NASA Wallops Flight Facility and Langley NASA Research Center help create 25,000 jobs and $2.8 billion in revenue, thanks in large part to the ingenuity of the small businesses with whom they work.

Through R&D grant programs, Federal agencies work with entrepreneurs to develop critical innovations. As a result of these partnerships, small firms have successfully pioneered breakthroughs in sectors ranging from health care to defense. But while there is no shortage of entrepreneurial innovation, the best ideas don't always make it to market. The real economic benefit of R&D occurs when inventions get to the point where they can be sold to both Federal agencies and private-sector clients.

One of the businesses you will hear from today, Analytical Mechanics Associates from Hampton, Virginia, developed cutting-edge computer simulation and modeling software to enable NASA to design the spacecraft of the future. That same software is now used by interior designers and architects to help plan new offices and homes.

But, unfortunately, the overall rate of commercialization is not yet where it should be. We must do more to help good products get to market, and it is important that our Federal labs have an increased focus on enhancing the process. Not only will this bring new products and technologies to the market, but it will help create jobs and speed our economic recovery.

For small firms already making marketable products, the Federal Government can be a critically important customer. Last year, the Federal marketplace grew by 9 percent, and today it is more important than ever that we ensure that the procurement process is fair for small businesses. Our entrepreneurs must have the tools they need to compete effectively and win Federal contracts.

So, as Congress moves forward, we will be making procurement a priority. By reauthorizing and enhancing SBA's contracting programs, we can ensure every small firm has a part to play in the innovation economy.

This past Monday, President Obama spoke about the importance of investing in research and development, not just to spur the growth of jobs today, but to maintain our position as the world leader in science, innovation, and breakthrough technologies.

Across the country, small businesses are already leading the way, and Federal laboratories are playing an important role in supporting their progress. It is my hope that we can build on their momentum and harness it, not only to strengthen small firms but to fuel our economy and to power the future of American innovation.

So, again, I would like to thank everyone for being here. And, at this point, I will yield to Mr. Schock, our ranking member, for any opening comments.

[The statement of Mr. Nye is included in the appendix.]

Mr. SCHOCK. Good afternoon. Thank you, Mr. Chairman, for holding this hearing to study the impact that the roughly 1,000 Federal labs across this country have in spurring economic growth

and opportunity in the States and local communities in which they operate.

I would also like to extend thanks to each of our witnesses, who have taken the time to provide this Committee with their testimony and have traveled here today in person.

Each year, the Federal Government spends about $143 billion on research activities, of which less than half is spent by Federal employees. That means there is a significant opportunity for Federal laboratories to engage in collaborative research with business or institutions within their local communities, providing a boost to the surrounding economy.

The importance these laboratories provide to the domestic marketplace through the exchange of ideas, inventions, research, and innovation cannot be understated. A number of inventive advancements developed in this country can be directly attributed to research done in conjunction with these Federal laboratories. In my hometown of Peoria, Illinois, the National Center for Agricultural Utilization Research, or Ag Lab, was one of the first to discover the uses, benefits, and power of the penicillin bacteria. The innovation these laboratories invoke is a vital component to keeping good-paying research-and-development-related jobs right here in the United States.

The success of these laboratories show that there is, in fact, an appropriate level of government involvement in the field of scientific research. However, it is important that we find what is the right level of involvement. Should the government be the sole proprietor of the innovative research done in this country? Or should we promote policies that engage private research, protect inventive property rights, and incentivize an equal participation in research and development from the private sector? It is important that we develop policies that continue to ensure our domestic industries participate in these fields and are assisted, rather than impeded, by the Federal Government.

Today, I anticipate that we will hear several different accounts of how the Federal research laboratories from different agencies are working to ensure that they have collaborative entrepreneurial partners in the communities in which they work, whether through the universities in their own backyard or with local businesses. And I look forward to hearing how each has made working with their local community a priority in their business model.

Additionally, I look forward to gaining insight into how some of these laboratories have been able to have a significant impact on the local economy, encouraging research-related businesses to flourish in the immediate areas. Specifically, what steps have these laboratories taken that are different from others? How can they be replicated by others to ensure that these research facilities are serving the American public, including small businesses in the area, rather than simply conducting research of interest to the bureaucrats here in Washington?

It is also equally important that we hear from the small businesses here today. It is the direct role of this Committee to ensure the integrity of the contract process so that small businesses receive their fair share of Federal research and procurement dollars.

What adjustments could be made to the procurement or research award process with laboratories on some of these public-private ventures to ensure that small businesses can bring their innovative skills to assist the Federal Government and improve economic development in the area in which the labs are located? I look forward to the insights that they can provide regarding the ease or difficulty in which they are obtaining some of these contracts.

Again, I thank all of the witnesses for traveling here today. At the end of this hearing, I hope we will gain a better understanding of what formulas or models work best for Federal laboratories to help promote economic growth and development with the local business community and in which they reside.

With that, Mr. Chairman, I yield back.

[The statement of Mr. Schock is included in the appendix.]

Chairman NYE. Thank you, Mr. Schock.

I would like to go ahead, and I am going to call on our witnesses to present their opening comments one by one.

We have a 5-minute rule that we are going to try to ask you to stick by. I know sometimes that can be a challenge. But in order to help you with that, you will notice in front of you when you are speaking a lighting system. The green one indicate you have time left. When it gets to yellow, 1 minute. Red means your 5 minutes are up. So if you get to the red, I hope you will please try to go ahead and wrap up your comments.

I would like to start by again thanking everyone for taking the effort to be with us and make the trip to be here today.

And I would like to introduce, first, Ms. Cynthia Lee, who is the associate director of the Langley Research Center for NASA. Ms. Lee oversees the operations of the center and serves as senior adviser to the center's director. Langley was founded in 1917 and is the Nation's first civilian aeronautical research facility and NASA's oldest field center.

Ms. Lee, thank you for being with us today, and we are looking forward to hearing your comments.

STATEMENT OF CYNTHIA LEE

Ms. LEE. Good afternoon. I am Cindy Lee, the associate director at NASA Langley Research Center, located in Hampton, Virginia. Thank you for the opportunity to testify before the Subcommittee regarding the significant role of high-tech small businesses in the research being performed at NASA Langley.

As you know, Langley is one of 10 NASA centers, and one of two facilities located in Virginia. NASA Langley provides a critical agency role through a diverse portfolio of work in aeronautics, exploration, science, space operations, and education. We are helping to transform the Nation's air transportation system to ensure safer, environmentally friendly, and efficient air travel. We are contributing to the science that will enable better understanding of our home planet, and we are helping develop the vehicles to support future human space activities.

There are currently about 3,700 employees at Langley, approximately half of whom are private-sector contractors working on or near-site. Of these private-sector employees, over one-third are employed by small businesses. During 2008, NASA Langley made a

total of nearly 900 awards to small businesses and obligated in excess of $150 million on both new and existing small business contracts for services ranging from commodities to research.

Today, I am going to highlight three examples of small businesses providing high-tech, cutting-edge research to Langley.

Science Systems and Applications, Incorporated, or SSAI, is a minority, woman-owned business of nearly 550 employees that is playing a critical role in science research and technology development. They contribute heavily to the Atmospheric Science Data Center that is located at Langley. This data center is one of the premier national repositories of atmospheric data important to understanding global climate change. Their efforts in data archiving and processing have resulted in major system performance improvements while significantly reducing costs.

SSAI has continually shown a dedication to supporting the NASA mission, and has recognized the importance of attracting and retaining specialized expertise for Langley. In addition to their technical excellence, they provide outstanding services to the community and to their employees through training and their scholarship programs. SSAI was recently selected as Langley's 2009 Small Business Prime Contractor of the Year.

Analytical Services and Materials, or AS&M, is a minority, woman-owned business of approximately 130 employees. For many years, they have provided analytical and experimental services that have contributed to NASA mission success across high-visibility aeronautics and space exploration programs. AS&M employees are part of a formidable team that has delivered thousands of computational solutions to the Constellation Program. Acting upon recommendations of the Columbia Accident Investigation Board, AS&M employees provided key analyses leading to corrective actions for improved Shuttle safety.

Responding to a 911 call from the National Transportation Safety Board, NASA brought AS&M experts in to help us analyze aircraft structural failures associated with airline accidents. Their work has been recognized with numerous awards, including the NASA Engineering and Safety Center Engineering Excellence Award and the 2006 Small Business Administration National Prime Contractor of the Year.

Analytical Mechanics Associates, or AMA, is a small business of nearly 90 employees who deliver critical support to NASA's exploration, science, and aeronautics programs. Their high-caliber team has provided key support to NASA's Constellation Program, including analysis of human lunar architecture concepts; the Ares launch vehicles, and the Orion crew module landing system.

AMA has provided critical support to NASA's science missions to Mars, including modeling and simulation for entry, descent, and landing. They also supported the recent Inflatable Reentry Vehicle Experiment flight demonstration at Wallops Island. AMA was nominated this year for NASA's prestigious George M. Low Award in the small business services category.

Small businesses are important to Langley because they are innovative, cutting-edge, agile, responsive, and provide technical excellence. Because Langley realizes the value of this community, we are heavily engaged in outreach activities for small businesses. In

2009, we communicated with small businesses over 5,000 times. We also have a Small Business Administration Procurement Center Representative on site. NASA Langley has spent approximately one-third of our procurement budget on small businesses for the last 12 years, and we have exceeded our small business goals for the past 9 years.

Again, I would like to thank you for the opportunity to appear before the Subcommittee today, and I look forward to addressing your questions.

Chairman NYE. Thank you very much, Ms. Lee.

I would like to now recognize Mr. Bruce Underwood, the technical manager of Wallops Space Flight Facility for NASA. Wallops Space Flight Facility was established in 1945 and is NASA's principal facility for management and implementation of sub-orbital research programs.

Mr. Underwood, thank you for being with us.

STATEMENT OF BRUCE UNDERWOOD

Mr. UNDERWOOD. Thank you, and good afternoon. My name is Bruce Underwood, and I am Chief of the Advanced Projects Office at NASA's Wallops Flight Facility. I am pleased to be here today to share with you the successes of small businesses at Wallops.

NASA's Wallops Flight Facility, part of the Goddard Space Flight Center in Greenbelt, Maryland, is located in a remote area of Virginia's eastern shore and is NASA's principal facility for the management and implementation of suborbital research programs.

Employing approximately 1,000 civil servants and contractor employees, Wallops is a major economic influence in the Maryland and Virginia regions, providing high-tech jobs in the areas of science and aeronautics. Wallops is one of the region's largest employers and is the largest technical employer within 100 miles.

Because of the nature of the mission and the remoteness of our campus, Wallops relies heavily on small businesses for support services. Wallops has found that there are intrinsic benefits that come with working with small businesses, including better customer focus, less bureaucracy, and often lower overhead costs. Wallops takes pride in being small but innovative and has found that the small businesses we work with share this important characteristic.

Wallops currently has six active construction contracts, all of which have small businesses as the prime contractors. One of these contractors, Construction Development Services, Incorporated, is based closely in Norfolk, Virginia. CDSI performed the renovation of the X-85 launch building at Wallops Island, a contract that was awarded on February 20, 2008, in the amount of $1.1 million through the Small Business Administration's 8(a) Program.

Prior to the completion of the original period of performance, funding became available to award two options for the original contract. These two areas of work were for a fire sprinkler system for the building and for new fabric door systems. As a small business, CDSI was able to offer Wallops an exceptional price for sprinkler and door systems that resulted in a minimal cost increase to the contract. A new period of performance was established, and the work completed satisfactorily and ahead of schedule.

CDSI was an exceptional contractor to work with on the renovation of X-85, the range's main meteorological station. Our launch range worked seamlessly during the construction period, which was a major concern. The supervision and coordination of this project was outstanding, as the contractor kept the project on schedule while balancing various subcontractors as well as several contract modifications during the life of the contract.

In August and September, two new contracts were awarded to this 8(a) firm for work at Wallops. One is for a new fire detection system in all of Wallops's buildings, and the other is for a grouping of small projects at other various facilities.

In fiscal year 2008, Wallops awarded 59 new contracts to small businesses, adding to the already existing 46 open contracts with small businesses. Fiscal year 2008 total obligations for new contracts to small businesses were $5.5 million, with another $41.5 million in modifications to existing contracts obligated. These numbers reflect the value of small businesses to Wallops and their important role in NASA's work.

Contract awards for Wallops are managed by the Goddard Space Flight Center, which works to ensure that small businesses continue to be a vital part of Wallops's operation. As part of this process, Goddard's Small Business Office reviews all procurement requests that are expected to exceed $100,000. Should there be qualified small businesses, the action is set aside for the small business community. In addition, all other actions that are not set aside and are above $550,000 are reviewed, and subcontracting goals are provided to be incorporated in the request for proposal and later into the contract of the successful offerer. Through these procedures, Goddard fosters opportunities for small businesses to provide their services in support of Wallops' mission.

While Wallops depends on small businesses for the success of its operations, the surrounding community relies on the success of Wallops to sustain and grow the local economy. The partnership between Wallops and small businesses is integral to a thriving economy on Virginia's lower eastern shore. And we at NASA are committed to building upon the current successes of that partnership to the benefit of all those involved with and touched by it.

Again, thank you for the opportunity to appear before the Subcommittee today, and I look forward to your questions.

[The joint statement of Ms. Lee and Mr. Underwood is included in the appendix.]

Chairman NYE. Thank you very much.

I am going to yield to Mr. Schock to do the next introduction.

Mr. SCHOCK. Thank you, Mr. Chairman.

Welcome, Mr. Sebesta.

Director Sebesta has been with the agriculture lab in my hometown of Peoria since November of 2008. Under his leadership, the lab works to develop new industrial and food products from agricultural commodities, as well as develop techniques that are used to control agricultural pests that decrease crop yields, pose health hazards, and limit exports for American crops.

Director Sebesta has a long history in scientific research at the university and Federal level. He has been published nearly 20 times and given numerous professional presentations around the

country on various research and development topics relevant to the agricultural community.

Welcome, and thank you for traveling to be with us.

STATEMENT OF PAUL G. SEBESTA

Mr. SEBESTA. Thank you, Congressman.

Chairman Nye, Ranking Member Schock, members of the Subcommittee, it is an honor to be here today to testify before you, and I thank you for asking me to attend. My name is Paul Sebesta. I am the center director of the National Center for Agricultural Utilization Research at USDA Agricultural Research Service Laboratory in Peoria, Illinois.

Nationwide, ARS operates over 100 laboratories and employs more than 8,100 people, with a budget of approximately $1.2 billion. The center in Peoria currently employs over 245 people and has a budget of more than $35 million annually.

ARS recognizes that small businesses are critical to our economic recovery and strength, to building America's future, and to helping the United States compete in today's global marketplace. The staff of the center also recognizes the fact that we are part of the local community and that the investments we make have significant impacts on the local economy. In fiscal year 2009, thus far we have made over $231,000 in purchases from 19 different small businesses in the central Illinois region.

ARS strives to assist and protect the interests of small business concerns in order to preserve free, competitive enterprise, which will strengthen the overall economy of our Nation. ARS annually exceeds all Federal small business procurement preference program mandates, and its small business coordinators and procurement personnel are extremely conscientious in assisting Americans to create, build, and grow small businesses. Thus far in fiscal year 2009, ARS has awarded 69 percent of its purchase contracts, or over $91 million, to small or disadvantaged businesses.

In order to focus on the regional and local economic impacts of ARS's contracting, I would like to focus on the Midwest. A recent review of prime contracts through the third quarter showed that ARS's Midwest area, of which the Peoria center is a part, is on course to not only meet but, in most categories, to far exceed its fiscal year 2009 small business goals.

The complete results of this survey, as well as the complete analysis of ARS's contracting nationwide, can be found in the appendix of my testimony.

The data reveals that two-thirds of all Midwest-area contract dollars have been awarded to small businesses. It also shows that the area has nearly tripled the 3 percent mandatory Federal-wide goal of contract dollar amounts to be awarded to service-disabled, veteran-owned small businesses.

Examples of ARS's Midwest area's commitment to finding local small businesses and forging strong business partnerships are three NCAUR small business contractors in central Illinois that have been providing supplies and services to the center for several years.

Maurer-Stutz is an architect and engineering firm who has an indefinite-delivery, indefinite-quantity contract with the Midwest

area office. Task orders issued to Mauer Stutz average $40,000 annually.

Poly Generics Company has been providing Environmental Protection Agency-regulated hazardous waste pickup for over 5 years to NCAUR. Orders placed with Poly Generics Company average $33,000 annually.

Herr Petroleum has been providing diesel for supplemental heating for the NCAUR facility for over 2 years. Orders placed with Herr Petroleum total approximately $23,000.

Additionally, a new 5-year operations and maintenance contract for NCAUR has just been awarded to AMERITAC, a small business located in Concord, California, in an amount in excess of $10 million. The contract staffs approximately 37 local employees, which has created job opportunities in Peoria. Materials used in direct support of the operation of the facility are also provided under this contract. A significant portion of those materials are purchased locally from small businesses.

The center in Peoria was established by Congress in 1938 and has occupied the same building since that time. In addition to being one of its oldest, the facility is also one of ARS's largest, at over 270,000 square feet. Currently, we are in the midst of a major multiphase modernization project. The contracts associated with this project also present opportunities for small businesses and are a boon to the local economy.

The current modernization contractor is Hammer Logistics, located in Caseyville, Illinois. The majority of work performed on the modernization contracts is subcontracted to local contractors, and materials are purchased through local suppliers. From 2000 through 2009, $21.6 million in appropriated funds have been allocated to NCAUR for modernization. These construction projects create many jobs within central Illinois and stimulate the economy through material purchases.

The American Recovery and Reinvestment Act will significantly advance this modernization project, as well as a large number of other ARS construction projects nationwide. The ARRA appropriated $176 million to ARS to conduct deferred maintenance projects on its facilities.

Thirty-eight projects have been selected across the agency, of which Peoria is the largest. The total projected cost for the Peoria project is estimated to be $40 million, which ARS estimates will create approximately 435 jobs.

As discussed earlier, ARS in the Midwest area have a strong history of awarding significant portions of contracted dollars to small businesses, and it is highly likely that this will continue as ARS works to obligate its ARRA funding.

In conclusion, Mr. Chairman, ARS realizes that Federal procurement is associated directly with the economic well-being of firms, municipalities, and cities. The agency, in concert with its area offices, will continue to seek partnerships with small businesses and continue to not only meet but to far exceed Federal and departmental small business goals.

Mr. Chairman and Ranking Member, thank you again for your invitation to testify today. I look forward to answering your questions.

[The statement of Mr. Sebesta is included in the appendix.]

Chairman NYE. Thank you very much.

I would like to go on now and introduce Dr. Hans Seywald, who is the president of Analytical Mechanics Associates, Incorporated, headquartered in Hampton, Virginia. AMA is a small business specializing in aerospace engineering, information technology, business analytics, and visualization solutions.

Doctor, thank you for being with us today.

STATEMENT OF HANS SEYWALD

Mr. SEYWALD. Thank you, Congressman Nye, Congressman Schock, and distinguished members of the Small Business Subcommittee on Contracting and Technology.

Thank you for the invitation and the opportunity to testify before the Committee. Specifically, we are here to discuss our experience in working with NASA, our role in generating innovative technology, and our success in stimulating local economic activity.

We are sincere in our hope that small business continues to be the driver of America's innovation engine. We seek not only to support NASA's mission to lead the world in space, exploration, science, and aeronautics, but also to help ensure America continues to be an economic leader in the 21st century. Headquartered in Hampton, Virginia, home is where the heart is. Our passion is to help NASA Langley and Wallops Flight Facility in their honorable pursuits.

Analytical Mechanics Associates, or AMA, is a small business celebrating almost 50 years of service to NASA and the industry. We specialize in engineering, information technology, visualization, and business analytics. Armed with this skill set and our passion to do excellent technical work, AMA has supported a broad range of past, present, and future NASA missions, including space shuttle, International Space Station, the Orion spacecraft and ARES launch vehicle developments for the Constellation Program, Mars missions, Earth science missions, and the Hyper-X flight experiment.

AMA's current management, Dr. Renjith Kumar and myself, took over the company in 1997 after economics and health forced the previous owners to sell the business. With just five employees and limited cash flow, the company was barely viable and could have folded at any time, but it didn't.

Our primary motivation in taking over the company had little to do with the ambition of running a business. Like so many small technical firms in their infancy, the primary objective was to do cutting-edge engineering research and development. Had the company gone out of business, an interesting small business innovative research grant that we were working on would have evaporated. We didn't want that to happen.

So that is our story, how two engineers evolved into entrepreneurs. We believe we are not alone. We believe that this is the true spirit of business in America, small business in America.

The company survived in part because we were able to enter the company into the SBA 8(a) program. We were actually surprised that we were still solvent at the end of the first year. Not only had we not lost our life savings, we were able to pay ourselves a mea-

ger salary and, at the end of the day, made a profit. This exceeded our expectations. So we made a $5,000 donation to a local high school in an economically disadvantaged area. The school later told us that it was the largest donation that they had ever received.

Let's now fast-forward 12 years. Today, AMA has almost 100 employees with some full-time consultants. We have experts in multiple aerospace engineering disciplines, information technology, business analytics, modeling and simulation, and visualization and multimedia.

The majority of our business falls under government contracts for NASA, but we have also started doing some work in the commercial sector. Over the last few years, our commercial business has fluctuated between 10 percent and 30 percent, with an overall increasing trend.

In a hyper-competitive global market, it is not easy for a small business to establish a presence in the high-tech industry, but we are making good process. Could we have done it without the relationship to NASA? Absolutely not.

Before we could cross over into the commercial market, we needed to assemble a critical mass of talent. The contract work at NASA enabled us to grow and retain these critical skills. In addition, being able to refer to our NASA work helped build the trust of new commercial clients.

Today, most of the solutions that we provide to our commercial customers are spinoffs or extensions of technologies that we developed for our customers at NASA. Also, our work at NASA provides a somewhat steady funding stream, helping bridge funding gaps that we face in the much more volatile commercial sector.

I think I need to skip a bunch of things.

Let me briefly touch on the role in education. We, as a company, place high importance on education and its role in the wellbeing of our community and country. We are privileged to help mold and educate future generations of aerospace and IT professionals through our internship programs, oftentimes in collaboration with NASA. There is nothing that captures the imagination of young minds more than space flight.

In conclusion, I would like to reiterate our sincere thanks for the opportunity to share our thoughts and story with the distinguished Committee. We would like to thank NASA for the continued support for almost 50 years. We are committed to the NASA mission and hope our efforts continue to help America pursue her highest goals.

Thank you.

[The statement of Mr. Seywald is included in the appendix.]

Chairman NYE. Thank you very much, Doctor.

I would like to go ahead now and introduce Mr. Chris Suber, president of Construction Development Services, Incorporated, based in Norfolk, Virginia. Construction Development Services provides general contracting, project management, design build, and consulting services to their clients and is a certified 8(a) small business established in 2000.

Mr. Suber, thank you for being with us.

STATEMENT OF CHRIS SUBER

Mr. SUBER. Thank you, Congressman Nye, Mr. Schock. And I would like to also thank my partner here today with me, Joe Slavinsky.

Construction Development Services, or CDSI, began servicing the Hampton Roads area in 2000, performing residential and light commercial projects. In May of 2006, CDSI became certified as a small disadvantaged business 8(a) general contractor.

This certification has allowed us to diversify and perform different types of construction projects, such as residential, institutional, commercial, and infrastructure. Each project has varied in cost and complexity with various scopes of work, including roofing, masonry, site work, HVAC, electrical, fire protection systems, sewage lift stations, and utilities. We have completed each project successfully by partnering with the government and understanding their needs and requirements.

My primary customer is the Federal Government at the military bases located in Hampton Roads and NASA Wallops Island. We currently service Norfolk Navy Base, NASA Wallops Island, Little Creek Amphibious Base, Portsmouth Naval Shipyard and Medical Center, and Langley Air Force Base.

In the last 3 years, we have completed over 75 different projects, ranging from $500 to $4.5 million. We have also consistently employed 20 to 25 personnel and employed approximately 75 different small, service-disabled-veteran-owned business, woman-owned businesses, and other subcontractors, vendors, and a multitude of tradespeople through this opportunity. These projects have been traditional design build and bid build, and they have all been awarded on a firm fixed price.

CDSI strives to know government contracting. As a result, we are able to adapt and use our in-depth experience gained while working at other small businesses and my partner Joe's experience as a Civil Engineer Corps officer in the Navy Seabees. Our goal is to be the Federal Government's contractor of choice for any type of project, including renovations, design build, contingency operations, and emergencies.

As Mr. Underwood testified, CDSI recently completed the renovation to launch project building X-85 at NASA Wallops Island. We demolished the existing facility down to its bare structural columns, concrete slab, and removed all exterior and interior walls and utility systems in total. We then renovated the facility, to include a new front entrance lobby area, which required pile-driving operations, new masonry/EIFS/storefront exterior, newly framed walls with interior walls, ceiling and floor finishes, along with a completely new electrical and HVAC system, men and women's restrooms, three 30-foot fabric-type roll-up doors, along with a new fire alarm and sprinkler systems. All work was in compliance with all the latest ADA requirements.

The project involved 15 different subcontractors from both the eastern shore and Hampton Roads area. The project created a multitude of job opportunities, both for CDSI and all of our vendors and subcontractors, of which 90 percent were small businesses themselves, and employing approximately 85 different people during the various construction phases of the project.

This project provided the scientists and technicians with far better working conditions, very modern finishes, amenities and utility systems which bettered the overall environment to conduct their research.

We look forward to participating in similar type construction projects that improve the quality of life for researchers and, at the same time, help the economic climate of the local area.

Thank you for this opportunity, and we look forward to answering any questions.

[The statement of Mr. Suber is included in the appendix.]

Chairman NYE. Thank you, Mr. Suber.

Again, I am going to yield to our ranking member, Mr. Schock.

Mr. SCHOCK. Thank you, Mr. Chairman.

It is my pleasure to welcome back to Washington, D.C., Dr. Peter Johnsen, who is the chief technology officer for Biofuels Manufacturers of Illinois, or BMI, which is also located in Peoria, Illinois.

BMI is assisting with the operation and construction of a biodiesel plant to be located in Mapleton, Illinois. BMI is also active in the development and education of the pennycress crop as a renewable energy source.

Dr. Johnsen has 30 years' experience at the university, government, and private-sector levels and the research and development field, helping to bring scientific innovations into the marketplace. Dr. Johnsen is also the former director of the agricultural lab in Peoria, and in 2004 he was named the Federal laboratory director of the year.

Dr. Johnsen, appreciate you coming to D.C. And joining us here today, and I look forward to your testimony.

STATEMENT OF PETER B. JOHNSEN

Mr. JOHNSEN. Mr. Chairman and Congressman Schock and members of the Committee, thank you for the invitation to testify before you today on the importance of small businesses working with Federal research facilities to promote innovation and entrepreneurship.

I believe that I may have a unique perspective in that I have been both a director of a national laboratory and am also now involved in several small technology companies working with Federal research facilities. I spent 20 years with USDA Agricultural Research Service and 12 of those as the director of the National Center for Agricultural Utilization Research in Peoria, Illinois.

And as a scientist and administrator, I was an early user and adopter of the National Technological Transfer Act, or the CRADA, Cooperative Research and Development Authority, to work with many companies to commercialize new discoveries. I have seen firsthand the benefit, and even the necessity, of Federal laboratories working with the private sector in creating economic value from basic science discoveries.

Since leaving the government, I have been involved with several companies that have approached technology commercialization in very different ways. In one, we took fundamental knowledge discovered by a USDA laboratory and refined the concept to develop a commercial product and methods to manufacture an advanced biobased product.

Absorbent Technologies, Incorporated, makes ZEBA, a starch-based ″hydrogel″ which holds and releases water similar to a sponge below the soil. Each ZEBA granule holds 500 times its weight in water and reduces the amount of water and nutrients required to produce greater yields and higher-quality crops. This company made use of the CRADA process early on and quickly achieved results that gave it the ability to obtain venture capital funding to bring its products to the marketplace. Today, we are selling this innovative product for commercial agriculture and lawn and garden applications in more than 10 countries worldwide.

I also serve as the chief technology officer of Biofuels Manufacturers of Illinois, as Congressman Schock mentioned. Our plan is to build and operate a production facility for biodiesel in central Illinois. But what distinguishes our effort is that we have been working with the USDA ARS to develop a new energy crop called pennycress. Pennycress is a member of the mustard family that has seeds with 36 percent oil, or twice that of soybeans, that can be used to make high-quality biodiesel fuel.

The crop is planted in the fall after corn harvest, grows as a winter annual, and then is harvested in late spring before soybean planting. So farming pennycress uses traditional equipment and allows farmers to grow two crops in 1 year, earning additional income. And, as a nonfood crop that does not displace food crops from the land or marketplace, it avoids both the food-versus-fuel and the indirect land use controversies completely.

The economic impact of this new crop is significant. A single biodiesel plant will purchase $100 million of pennycress seed each year. And Illinois alone has the capacity for 18 such operations, with the economic impact of pennycress as an energy crop across the Midwest corn belt being extraordinary.

It was USDA research scientists who discovered the potential of pennycress as a remarkable new energy crop, but the only way for the Nation to benefit from this discovery was for the government to collaborate with the private sector. However, there are a number of issues that have made it very difficult for a small business like ours to work effectively with the government in completing this.

We have made significant investments in sponsoring research at two Federal laboratories and the university through CRADA agreements to develop this crop. And, clearly, it takes significant financial upfront capital to create such an energy crop, develop its logistics infrastructure, and optimize processing technology.

Because this energy crop meets the strategic objectives of both USDA and DOE in creating a sustainable energy source, we have competed for competitive grants to develop this crop. One of the requirements of these grant applications is that a 20 percent financial match be made by the applicant, and for small businesses like ours this is a very difficult problem.

It is ironic that BMI is funding USDA and university research rather than being able to obtain contracts from them to perform the important task of creating a new environmentally friendly and sustainable energy source. It would be helpful if the Committee were to examine the policies that require small businesses to provide significant financial matches in grant application processes. This is a very difficult process for the small companies and limits

the scope and duration of the project proposals. We would propose that these be eliminated entirely or be scaled to the resources of the small technology company.

In my many years as a university professor, director of a government laboratory, or in a private company, I have seen the evolution of laws and policies that enhance the ability of the Nation to benefit from public investment in science and technology. I hope that I have provided information today and in my written statement that this Committee will consider in its work to maximize the opportunities of small businesses to work with Federal research laboratories to promote entrepreneurship and innovation.

Thank you for this opportunity, and I would be happy to answer questions at the appropriate time.

[The statement of Mr. Johnsen is included in the appendix.]

Chairman NYE. Great. Thank you.

And, again, thank you to all of our panel members for being here and for your opening statements.

I am going to ask a number of questions and then offer opportunities for the other members of the Committee to ask some questions.

I want to just start with Ms. Lee. I want to follow up on something you mentioned in your opening statement. And you outlined some successful examples of small businesses with whom you are working through Langley, one of whom is here. And, in fact, you mentioned that Langley had exceeded its small business target, I think you said, over the last 9 years in a row, and I am impressed to hear that.

And I was hoping you would maybe provide us with a little bit more detail on some, perhaps, some examples that we can use and apply to others and tell us, kind of, how you did that or if there are particular advantages at Langley or things that you have done that have helped you surpass that goal and what might we learn from your example.

Ms. LEE. Thank you, Chairman. I would be happy to.

So, for us, small business is a contact sport. And we have a small business office located at Langley that does significant marketing and outreach. They counsel small businesses. They provide things like an automatic e-mail system that is actually a NASA system, such that companies can provide their area of expertise or their core competency and automatically gets update from FedBizOpps on either government-wide or NASA procurements.

But we also do a host of other things. We do conferences, expos and market research to ensure we know what companies are out there and what they are providing. And then regionally, we do a lot of things.

Overall in our procurement office, 63 percent of our procurements—this is not just small business—are for funds that are for work performed in Hampton Roads. And so, regionally we have a Hampton Roads Technology Council. We have an AeroSpace Day, where we match local businesses with NASA, and together we go up to the General Assembly and we talk about the aerospace community and what we bring to the Commonwealth. So we raise awareness in that way for our small businesses.

We have texpos, where we invite industry in so that they can see the areas of work that NASA's interested in. And then we have open houses, as well.

And then a couple of things that are a little bit unique to NASA Langley, we have things called tech fusion and tech infusion workshops. Now, tech fusion workshops are between our prime contractors and SBIR—or small business innovative research—proposal winners, such that those prime contractors can be made aware of those innovations. And then we target our prime contractors with additional goals beyond our own goals. So we ask them to meet some of them upwards of 30 percent goals. So, goals just like ours that they have to meet. And so it is incumbent upon them to understand what our small businesses are doing.

And then, likewise, we have many of our researchers that may not be aware of the contribution small businesses can make. So we have what are called tech infusion workshops, where we bring NASA program folks together with the SBIR community so that they can share and learn about each other's needs and contributions that they can make.

So, there are a host of things that we do. It is not any one answer that have made us successful, but it is continuing to get out there and understand the community and then set stretch goals for ourselves that has made us successful.

Chairman NYE. Okay, great. Well, appreciate that.

And I would like to follow that up by a question to Mr. Underwood. Wallops has been doing a lot of good work. And I wanted to note that, next year, a Taurus II rocket will launch to supply the International Space Station, noting also that there are additional commercial launch opportunities developing.

Can you please just give me some thoughts on where you see that going and how that will affect the local small business community?

Mr. UNDERWOOD. Yes, certainly.

It is quite exciting, actually, for us. And we kind of view it as a major landscape changing, both figuratively as well as literally, in what is happening at Wallops, because over the next year and a half we have at least 40 and as much as perhaps 90-some million dollars' worth of construction activities that we are going to have to undertake in order to create the infrastructure to accommodate the Orbital Sciences Corporation's needs. Some of that will be from Federal investments, and some will actually be through the Commonwealth of Virginia's investments in their infrastructure through our commercial space port. All of us in this exercise will be utilizing small businesses to one degree or another to help with those construction activities.

And then, along with that are obviously, beyond the facilities, the brick-and-mortar aspects of accommodating the new vehicle and the growth in our launch activities. We are actually going to have Orbital Sciences Corporation bringing a large contingent of new employees to the area, of which they are going to be needing a lot of services, themselves, purely on the commercial side of what is going to happen. They are going to need workforce for engineers and laborers. They are also going to be needing component parts. All of these opportunities most easily or most effectively are pro-

vided by the local economy as opposed to having to bring them in from outside. So the first place that all of us tend to look is in our own backyards for these opportunities.

So I think the combination of what the Federal Government is going to be doing on the NASA side, as well as what the State, THE Commonwealth of Virginia, as well as what Orbital Sciences themselves are going to be doing, are going to create an enormous amount of opportunities over the next year. It is quite exciting at Wallops.

Chairman NYE. Have you found that finding small business local in the community has been a challenge in terms of your interest in local small business community makeup? Or is that something that has worked out well?

Mr. UNDERWOOD. It is kind of a constant supply-and-demand juggle, which is, if there aren't the opportunities, then it takes a while for the companies to react when they do show up. So, in which cases, many of us at Wallops, both on the commercial side and the government side, are working with organizations such as the local community colleges and things like that to make sure that we are waking them up to the opportunities that are forthcoming. So then we hopefully have a workforce that is interested in the local folks coming out of the high schools, and go into area where we can keep them at home and actually employ them. So that is one particular aspect of what we are doing, working with the local community colleges and universities to be aware of the opportunities that are coming.

But, yeah, in many cases, the growth happens faster than we can accommodate it, so we have to look elsewhere. But that is not our first means of searching.

Chairman NYE. Okay. Thank you.

I want to ask both Dr. Seywald and Mr. Suber, you mentioned that your businesses are 8(a) businesses. And I want to actually take the opportunity to ask you if you could comment on how the program has been helpful in terms of opening doors specifically for your companies, but also if there are any challenges that you have had with the program and if there are things that you would like us to know in terms of how we might make the programs work better or anything that you would change about it.

And I will offer the opportunity to both of you to comment.

Mr. SEYWALD. The program was absolutely essential for us in the beginning when we were, like, five people. It means, like, three income-generating people and two on overhead. SBA helped us tremendously in getting on the 8(a) program. And once we were on the 8(a) program, we were more attractive to the prime contractor as a teaming partner.

Small businesses, microbusinesses, like less than 10 people, have really no way of interacting directly with NASA or other Federal labs. It is typically as a subcontractor, and there it is more like throwing darts. It is very difficult making yourself attractive for a prime contractor, and it is hard to pick the right one if you have a choice.

So, if the prime contractor loses—and the prime contractor usually loses not because of the sub not performing well or not having a great background; it is based on the qualification of the prime.

So performance of the sub is not really a big issue there in the potential survival or demise of the small business.

Yes, the SBA program was extremely helpful in the beginning. And, without it, we would probably not have survived.

Mr. SUBER. Like Dr. Seywald said, it also made us more attractive, as well. Some of the challenges that we faced were, I guess, not similar to the service side of it, but bonding was an issue. We know that anything over the 35 mark you need a payment bond, and anything over 100,000 requires a performance and a payment bond, which is directly tied back to the capital of the company.

And so, many times, you know, if personally you, as the individual owner or group of owners, may not have all of the capital necessary to get the appropriate bonding, you can have all of the capabilities to service a contract but not be able to be awarded it because of the bonding.

The other piece of the challenge, I would say, is getting to the right person that could help you find or get that contract at a base where you don't already have a relationship. For Langley, for NASA Wallops, for all of the bases that I mentioned, we had previous relationships, where we knew someone, where we could get past the gate, get in the door, talk to the right people. That seems to be a challenge.

So if we had an opportunity—you can't always get to the right folks, like Ms. Lee said, at some forum or something like that. If there was another way that you can get to the right person, that would be helpful.

But it was critical to our success, as well.

Chairman NYE. Great.

And I want to offer, actually, an opportunity generally for any of the three of you, the business owners here, to provide any more comments on the contracting process.

And if there are other things that you think particularly work well or barriers that you have identified that make it difficult for you, I want to offer an opportunity for anyone to add additional comments on things that they think we ought to know.

Mr. JOHNSEN. Well, one of the things that is a little bit different for the agricultural community from, say, NASA or Department of Energy is that there are not a lot of technology contracts that are awarded to do discovery or development work. The only funding that comes in that direction tends to be in the form of competitive grants, and those are very, very difficult.

I mentioned one issue with the matching process, but there are other elements that make small businesses be disadvantaged in competing for those grant systems that relate to, for example, in the loan guarantee programs that require that you have a money center bank cosponsor your application with a loan guarantee program.

Where we have been able to put together a consortium of community banks who are willing to help us with the project, the USDA requires that a large money center bank, with the experience of a similar-size project, be the lender of record. And that means that small community companies and banks can't build the capacity to go after the larger kinds of opportunities.

So that is another problem for small businesses within the agricultural sector.

Chairman NYE. Go ahead. I will yield to Mr. Schock.

Mr. SCHOCK. I am just curious, for the benefit of the Committee, if you can talk a little bit more about that. I heard you say that they not only require a specific bank but also that bank have a history on like projects.

Mr. JOHNSEN. Exactly.

Mr. SCHOCK. Well, how does that spur innovation? If you are doing something new, how can a bank have history on this kind of specific project?

Mr. JOHNSEN. That is the conundrum. It is sort of a catch-22, in that the loan guarantee programs are typically designed around development of rural infrastructure. And so, these are sort of classic construction projects. But if you want to come forward to build a new technology, a new kind of operation, you sort of fall in the gap with the rules that surround both the expertise of the company and the expertise and the resources of the lending institution.

And so it has just been very difficult to kind of move an innovative project forward with these traditional programs.

Mr. SCHOCK. And do you know, based on what you are being told, are those rules? I mean, in other words, are those regulations promulgated by rules? Are your Federal folks telling you—I won't call them what I was going to say—

Mr. JOHNSEN. Well, I will tell you where the language resides. The language resides in the Federal Register, a description of the program. And so, when we get ready to respond to the requirements of the program, we have discovered that we can't qualify even to make the application, because we cannot get a money center bank to—because there are none in the central Illinois and the Midwest that are prepared to help us move a proposal like that forward.

But, like I said, we have put together a consortium of community banks, who have very solid financial standing now, a lot of money to lend. But they cannot go before the—and this is the Rural Development Agency that we—and we can talk more offline about this specific program. It is a 9003. It goes on and on.

Mr. SCHOCK. Okay, great. Thank you.

Chairman NYE. Well, I appreciate that. It sounds like you have highlighted a very practical challenge.

Again, I offer the opportunity to anybody else on the business side that wanted to comment on other challenges, if you have any.

Mr. SEYWALD. In our experience, the contract bundling made it very difficult. Small businesses, even if they have great capabilities, typically cannot go directly to NASA and get these micro contracts. They really depend on the prime contractors. And so, it is not often the capability of the small business, it is the relationship to the prime contractor that plays a major role.

Chairman NYE. Okay. Yeah, and of course that is something that we have heard a number of times.

Again, I also want to offer an opportunity to our agency representatives to make any comments about particular tools that they have found useful in attracting small businesses or helping achieve small business contracting goals or any obstacles that you

find that you think we might be helpful in solving or that we at least ought to be aware of.

Ms. LEE. I think one thing—you mentioned the Small Business Administration. And one of the things that we make sure in our small business office is to refer folks to the Small Business Administration Small Business Development Center, because we have 29 of those in Virginia, and it really does assist those small businesses in how to start up.

We also send folks to the DOD Procurement Technical Assistance Centers, or PTACs. That helps a small business learn how to do business with the Federal agencies. And so we hear from our small businesses that that has been very effective in helping them learn how to work with Federal agencies.

Now, on the other side, once we have a contract with a small business, we look at a little bit different approach in terms of what they have to do in the way of reporting. Often, with our prime contractors, we have very rigorous costing performance reporting requirements, earned value management and things like that, that would be required. For small companies we don't necessarily require that level of rigor, because we know that that is something a small company wouldn't be able to do for us. And so, while we do expect costing performance that is excellent, we still look at different ways to help them do that reporting for us.

Chairman NYE. Okay. Thanks.

I think I will yield now to Ranking Member Schock for any other questions that he might have.

Mr. SCHOCK. Thank you, Mr. Chairman. You have asked a lot of good questions, so I don't have as many left.

But I would ask specifically for one of my guests, Dr. Sebesta, if there is anything that we can be doing here in Washington, either through policies or providing you dollars for infrastructure, that would better help you create, kind of, agricultural utilization clusters there in Peoria or allow for better synergies to take place.

Mr. SEBESTA. Thank you, Congressman.

We are always looking for opportunities to partner with small business and with creative companies, such as BMI, in the development of technologies that come out of our research center. And perhaps we could have another dialogue later on how we might be able to do that and bring people together that we need to have that conversation.

Our scientists are evaluated by the impact of their research, and that impact is measured by the amount of private-sector partners we have on that research and how that research is bettering American lives. And so we need to look at how we can develop that further.

Mr. SCHOCK. Okay. Very good.

Dr. Johnsen, I am interested in your reaction to the 2007 energy bill. The Small Business Administration, as a result of the 2007 energy bill, was required to create some special types of venture capital that invest in small businesses involved in the development of renewable fuels.

And I am wondering if you are aware of that and whether such a venture capital company would help your company, specifically BMI.

Mr. JOHNSEN. We are aware of that. One of the challenges for most venture capital systems and programs is that they require that there be a large body of intellectual property protection—that is, a barrier to entry from other companies.

When you are trying to do something similar to BMI, which is to create a whole national system of growing pennycress, where many other biodiesel companies would then take a crop that has so many economic and environmental and social advantages and make a renewable fuel, a company like ours, which is almost doing the public duty of the USDA in developing these kinds of activities, sort of falls short in the eyes of the venture capitalists. Because they are looking for, how can I invest in a company, make sure it makes the most money relative to anybody else that competes. And so, for a company like us that is trying to invent a system which is open, which serves the greatest national need, is a very difficult thing for venture capital.

That being said, I think that those kinds of programs can enhance something that we have in Peoria called PeoriaNEXT, which is a partnership between, say, the Ag lab, Bradley University, Caterpillar research and development, the hospitals, where we are trying to actually create a business cluster around the research and development technologies.

One of the things that PeoriaNEXT lacks is, sort of, operating funds to develop the relationships between the Ag lab, the scientists at Bradley University, the scientists that are at Caterpillar, where they can create businesses so that those businesses can then grow and compete for opportunities.

So those kinds of, sort of, nurturing of that infrastructure to grow clusters is something that is a shortfall in our region and would be very helpful to growing small businesses that are particularly around science, technology, and agriculture.

Mr. SCHOCK. Very good.

That is all I have.

Chairman NYE. Great.

Well, this is very helpful to us. And I want to thank, again, our panelists for taking the time to be here today and for the hard work that you are doing out in our communities to try to spur innovation. I appreciate your being here and sharing your thoughts and your expertise with us and wish you all a very safe trip back home. Thank you very much for being here.

I am going to ask for unanimous consent that members have 5 days to submit statements and supporting materials for the record.

Without objection, so ordered.

Chairman NYE. This hearing is now adjourned.

[Whereupon, at 1:50 p.m., the Subcommittee was adjourned.]

GLENN NYE, VIRGINIA
CHAIRMAN

AARON SCHOCK, ILLINOIS
RANKING MINORITY MEMBER

Congress of the United States
U.S. House of Representatives
Committee on Small Business
Subcommittee on Contracting and Technology
2361 Rayburn House Office Building
Washington, DC 20515-0315

STATEMENT
Of the Honorable Glenn Nye, Chairman
House Committee on Small Business, Subcommittee on Contracting and Technology
"The Roles of Federal Labs in Spurring Innovation and Entrepreneurship Across the U.S."
Thursday, September 24, 2009

Small businesses are the most innovative sector of our economy. Not only are they responsible for some of the most important technological breakthroughs of the past century, but they are also going to be responsible for 60-80% of the new jobs as they drive our economy to recovery.

One of the most successful ways we have to help support the growth of innovative small businesses is through partnerships with federal labs and research facilities.

Last year, small businesses won 4,000 contracts through USDA federal research facilities, amounting to over 100 million dollars. Meanwhile, NASA awarded an additional 2,500 small business contracts, totaling 400 million dollars. All told, fiscal year 2008 saw a $143 billion investment in research and development. At face value, these are significant investments – the kind that go a long way to spark invention. But the benefits don't just stop at the laboratory door. Rather, they go on to support regional economies through job creation and product commercialization.

In today's hearing, we will examine the role that federal labs play in local markets, and the support they provide entrepreneurs nationwide. We will also look for ways to ensure that procurement policies continue to work for small firms, and that promising research makes its way from the laboratory to the marketplace.

In local economies across the country, federal labs have brought tremendous growth. In Hampton Roads and on Virginia's Eastern Shore, NASA labs sustain roughly 11,000 jobs, and generate 1 billion dollars in economic output each year. At the national level, the impact of these facilities is also significant. Every year, the NASA Wallops Flight Facility and NASA Langley Research Center help create 25,000 jobs and 2.8 billion dollars in revenue – thanks, in large part, to the ingenuity of the small businesses with whom they work.

Through R&D grant programs, federal agencies work with entrepreneurs to develop critical innovations. As a result of these partnerships, small firms have successfully pioneered breakthroughs in sectors ranging from healthcare to defense. But while there is no shortage of entrepreneurial innovation, the best ideas don't always make it to market.

The real economic benefit of R&D occurs when inventions get to the point when they can be sold to both federal agencies and private sector clients.

One of the businesses you will hear from today – Analytical Mechanics Associates from Hampton, Virginia – developed cutting-edge computer simulation and modeling software to enable NASA to design the spacecraft of the future. That same software is now used by interior designers and architects to help plan new offices and homes.

But, unfortunately, the overall rate of commercialization is not yet where it should be. We must do more to help good products get to market, and it's important that our federal labs have an increased focus on enhancing the process. Not only will this bring new products and technologies to the market, but it will help create jobs and speed our economic recovery.

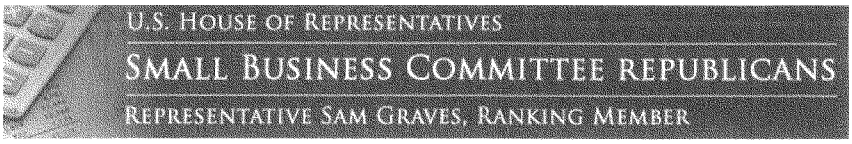
For small firms already making marketable products, the federal government can be a critically important customer. Last year, the federal marketplace grew by 9 percent - and today it is more important than ever that we ensure that the procurement process is fair for small businesses. Our entrepreneurs must have the tools they need to compete effectively and win federal contracts.

So, as Congress moves forward, we will be making procurement a priority. By reauthorizing and enhancing SBA's contracting programs, we can ensure every small firm has a part to play in the innovation economy.

This past Monday, President Obama spoke about the importance of investing in research and development – not just to spur the growth of jobs today, but to maintain our position as the world leader in science, innovation, and breakthrough technologies.

Across the country, small businesses are already leading the way – and federal laboratories are playing an important role in supporting their progress.

It is my hope that we can build on their momentum, and harness it – not only to strengthen small firms, but to fuel our economy, and to power the future of American innovation.



Opening Statement
Rep. Aaron Schock
Ranking Member Subcommittee on Contracting and Technology
House Committee on Small Business
Hearing: ***The Roles of Federal Labs in Spurring Innovation and Entreprenurship Across the U.S.***
September 24, 2009

Good afternoon. Thank you, Mr. Chairman, for holding this hearing to study the impact that the roughly 1000 federal labs across this country have in spurring economic growth and opportunity in the states and local communities in which they operate. I'd also like to extend thanks to each of our witnesses who have taken the time to provide this Committee with their testimony and have traveled here today in person.

Each year, the federal government spends about $143 billion on research activities, of which, less than half is spent by federal employees. That means there is significant opportunity for federal laboratories to engage in collaborative research with the businesses or institutions within their local communities, providing a boost to the surrounding economy.

The importance these laboratories provide to the domestic market place through the exchange of ideas, inventions, research and innovation cannot be understated. A number of inventive advancements developed in this country can be directly attributed to research done in conjunction with these federal laboratories. In my hometown of Peoria, Illinois, the National Center for Agricultural Utilization Research or Ag Lab was one of the first to discover the uses, benefits, and power of the penicillin bacteria. The innovation these laboratories invoke is a vital component to keeping good paying research and development related jobs here in the United States.

The successes of these laboratories show that there is in fact an appropriate level of government involvement in the field of scientific research. However, it is important that we find what that right level of involvement is. Should the government be the sole proprietor of innovative

research done in this country? Or should we promote policies that encourage private research, protect inventive property rights, and incentivize equal participation in research and development from the private sector. It is important that we develop policies that continue to ensure our domestic industries participate in these fields and are assisted, rather than impeded, by the federal government.

Today, I anticipate we will hear several different accounts of how federal research laboratories from different agencies are working to ensure that they have collaborative entrepreneurial partners in the communities in which they work. Whether through the universities in their own backyard or with local businesses, I look forward to hearing how each has made working with their local community a priority in their business model.

Additionally, I look forward to also gaining insight into how some of these laboratories have been able to have a significant impact on the local economy, encouraging research related businesses to flourish in the immediate areas. What steps have these laboratories taken that are different than others? How can they be replicated by others to ensure that these research facilities are serving the American public, including small businesses in the area, rather than simply conducting research of interest to bureaucrats here in Washington.

It is also equally important that we hear from the small businesses here today. It is the direct role of this Committee to ensure the integrity of the contract process so that small businesses receive their fair share of federal research and procurement dollars. What adjustments could be made to the procurement or research award process with laboratories on some of these public private ventures to ensure that small businesses can bring their innovative skills to assist the federal government and improve economic development in the area in which the labs are located? I look forward to the insight they can provide regarding the ease or difficulty in which they are obtaining some of these contracts.

Again, I thank all of our witnesses for traveling here today. At the end of this hearing I hope we will gain a better understanding of what formulas or models work best for federal laboratories to help promote economic growth and development within the local small business community in which they reside. With that, I yield back.

HOLD FOR RELEASE
UNTIL PRESENTED
BY WITNESSES
September 24, 2009

Statements of
Cynthia C. Lee, Associate Center Director of Langley Research Center
and
Bruce E. Underwood, Chief of the Advanced Projects at the Wallops Flight Facility
National Aeronautics and Space Administration

before the

Subcommittee on Contracting and Technology
House Committee on Small Businesses
House of Representatives

Thank you for the opportunity to testify before the Subcommittee regarding NASA's efforts to increase opportunities for small businesses, particularly at NASA's Langley Research Center (LaRC) and Wallops Island facilities.

Overview of the Office of Small Business Programs

The NASA Office of Small Business Programs seeks to promote and integrate all small businesses into the competitive base of contractors that pioneer the future of space exploration, scientific discovery, and aeronautics research. Its mission is to advise the Administrator on all matters related to small business; to promote the development and management of NASA programs that assist all categories of small business; to develop small businesses in high tech areas that include technology transfer and commercialization of technology; and to provide small businesses maximum practicable opportunities to participate in NASA prime contracts and subcontracts.

Highlights of Langley Research Center Small Business Activity

LaRC, located in Hampton, Virginia, is one of 10 NASA Centers, and one of two facilities located in Virginia. LaRC provides a critical Agency role through a diverse portfolio of work in aeronautics, exploration, science, space operations, and education. This Center is helping to transform the nation's air transportation system to ensure safer, more environmentally friendly and efficient air travel, contributing to the science that will enable a better understanding of our home planet, and help develop the vehicles to support future human space activities.

There are currently about 3,700 employees working at Langley, approximately half of whom are private-sector contractors working on-or near-site. Of these private-sector employees, over one-third are employed by small business firms. During FY 2008, Langley made nearly 900 awards to small businesses and obligated in excess of $150 million of NASA funds on both new and existing small business contracts for services ranging from commodities to high-tech, cutting edge research.

Some examples of small business companies providing high-tech, cutting edge research to NASA at Langley are as follows:

The Science, Systems, and Applications, Inc (SSAI) is a minority woman-owned company of nearly 550 employees that is playing a critical role in science research and technology development. SSAI contributed heavily to the completion of the Archive Next Generation (ANGe) system, a key component of the Atmospheric Science Data Center (ASDC) located at Langley. The ASDC is one of the premier national repositories of atmospheric data important to understanding global climate change. Their efforts in data archiving and processing have resulted in major system performance improvements while significantly reducing operational costs. Additionally, SSAI provides data analysis, algorithm development, and operational support to Langley science missions focused on understanding the composition of the Earth's atmosphere and climate change. SSAI has continually shown a dedication to supporting the NASA mission and has recognized the importance of attracting and retaining specialized expertise for Langley. In addition to their technical excellence, SSAI provides outstanding service to the community and to their employees through training, performance awards, and scholarship program. SSAI was recently selected as NASA Langley's 2009 Small Business Prime Contractor of the Year.

The Analytical Services and Materials, Inc. (AS&M) is a minority, woman-owned business of approximately 130 employees. For many years, AS&M has provided analytical and experimental services that have contributed to NASA mission success across high-visibility aeronautics and space exploration programs. AS&M employees are part of a formidable team that has delivered thousands of computational solutions to the Constellation Program. Acting upon recommendations of the Columbia Accident Investigation Board for Shuttle return to flight, AS&M provided key structural analyses leading to corrective actions for improved Shuttle safety. Responding to a 911 call from the National Transportation and Safety Board, NASA brought AS&M experts in to help analyze and understand aircraft structural failure associated with airline accidents. Their work has been recognized with numerous NASA awards including the Silver Snoopy Astronauts' Personal Achievement Award and the NASA Engineering and Safety Center Engineering Excellence Award. AS&M was awarded the Small Business Administration National Prime Contractor of the Year award in 2006.

Analytical Mechanics Associates (AMA) is a small business of nearly 90 employees who deliver critical support to NASA's Exploration, Science, and Aeronautics missions. AMA's high-caliber team has provided key support and made major contributions to NASA's Constellation program to replace the Space Shuttle, including definition and analysis of human lunar architecture concepts; structural analysis and design for the Ares I and Ares I-X launch vehicles and Orion Launch Abort System; and modeling and simulation for the Orion Crew Module Landing System. AMA has provided critical support to NASA's Science missions to Mars, including comprehensive modeling and simulation for Entry, Descent, and Landing. AMA also provided support to the recent Inflatable Re-entry Vehicle Experiment sounding rocket flight demonstration launched from Wallops Island, Virginia. In addition to technical excellence, AMA provides outstanding service to the community through their contributions to charitable organizations. AMA was nominated by NASA Langley this year for NASA's prestigious George M. Low award in the small business services category.

Small businesses are vital to the United States economy as they employ just over half of all private sector employees, hire 40 percent of high tech workers, and have generated 64 percent of net new jobs over the past 15 years. Small businesses allow the federal government to work with some of the most innovative companies in America, often with direct access to the chief executive officer since the organizational structure tends to be much flatter than their large business counterparts. Small businesses are important to Langley because they are innovative, cutting edge, agile, responsive, and provide technical excellence across the board. Because NASA Langley realizes the value of the contributions of the small business community to the United States and to our Center specifically, the Langley small business specialist is heavily engaged in counseling and outreach activities. In FY 2009 alone, we have communicated with small businesses over 5,000 times via e-mail, phone or in person. We also have a Small Business Administration Procurement Center Representative on-site. NASA Langley has averaged spending approximately one-third of our procurement budget to small businesses over the last 12 years, and we have exceeded our small business goals for the past 9 years.

Highlights of Wallops Flight Facility Small Business Activity

NASA's Wallops Flight Facility, part of the Goddard Space Center in Greenbelt, Maryland, is located in a remote area on Virginia's Eastern Shore and is NASA's principal facility for the management and implementation of suborbital research programs. Employing approximately 1,000 civil servants and contractor employees, Wallops is a major economic influence in the Maryland and Virginia regions, providing high-tech jobs in the areas of science and aeronautics. Wallops is one of the region's largest employers and is the largest technical employer within one hundred miles. Because of the nature of the mission and the remoteness of the campus, Wallops relies heavily on small business for support services. Wallops has found that there are intrinsic benefits that come with working with small businesses, including better customer focus, less bureaucracy, and often lower overhead costs. Wallops takes pride in being small but innovative, and has found that the small businesses share this important characteristic.

Wallops currently has six active construction contracts, all of which have small businesses as the prime contractors. One of these contractors, Construction Development Services Inc. (CDSI) is based close by in Norfolk, Virginia. CDSI performed the Renovation of the X-85 Launch Building at Wallops Island, a contract that was awarded on February 20, 2008 in the amount of $1.1 million through the Small Business Administration's 8(a) Program. Prior to the completion of the original period of performance, funding became available to award two options to the original contract. These two areas of work were for a fire sprinkler system for the building and for new fabric door systems. As a small business, CDSI was able to offer Wallops an exceptional price for sprinkler and door systems that resulted in a minimal cost increase to the contract. A new period of performance was established and the work completed satisfactorily and ahead of schedule.

CDSI was an exceptional contractor to work with on the Renovation of X-85 project, the Range's main meteorological station. Our launch range worked seamlessly during the construction period, which was a major concern. The supervision and coordination of this project was outstanding, as the contractor kept the project on schedule while balancing various subcontractors as well as several contract modifications during the life of the contract. In August and September, two new contracts were awarded to this 8(a) firm for work at Wallops. One is for a new Fire Detection System in all Wallops Buildings and the other is for a grouping of small projects at various buildings.

In FY 2008, Wallops awarded 59 new contracts to small businesses, adding to the already existing 46 open contracts with small businesses. FY 2008 total obligations for new contracts to small businesses

were $5.5 million, with another $41.5 million in modifications to existing contracts obligated. These numbers reflect the value of small businesses to Wallops and their important role in NASA's work.

Contract awards for Wallops are managed by Goddard Space Flight Center (GSFC), which works to ensure that small businesses continue to be a vital part of Wallops' operation. As part of this process, GSFC's small business office reviews all procurement requests which are expected to exceed $100,000. Should there be "qualified small businesses," the action is set-aside for the small business community. In addition, all other actions that are not set-aside and are above $550,000 are reviewed and subcontracting goals are provided to be incorporated into the request for proposal and later into the contract of the successful offeror. Through these procedures, GSFC fosters opportunities for small businesses to provide the services in support of Wallops' mission.

While Wallops depends on small businesses for the success of its operations, the surrounding community relies on the success of Wallops to sustain and grow the local economy. The partnership between Wallops and small businesses is integral to a thriving economy on Virginia's lower Eastern shore, and we at NASA are committed to building upon the current successes that partnership to the benefit of all those involved with and touched by it.

Again, thank you for the opportunity to appear before this Subcommittee today. We will be pleased to respond to any questions that you may have.

STATEMENT OF DR. PAUL SEBESTA

DIRECTOR, ARS NATIONAL CENTER FOR AGRICULTURAL UTILZATION RESEARCH

UNITED STATES DEPARTMENT OF AGRICULTURE

Before the

HOUSE SMALL BUSINESS COMMITTEE

SUBCOMMITTEE ON CONTRACTING AND TECHNOLOGY

September 24, 2009

Chairman Nye, Ranking Member Schock, Members of the Subcommittee, it is an honor to be here today to testify before you and I thank you for asking me to attend. My name is Dr. Paul Sebesta; I am the Center Director of the National Center for Agricultural Utilization Research (NCAUR), a United States Department of Agriculture (USDA), Agricultural Research Service (ARS) laboratory in Peoria, IL.

Nationwide, ARS operates over 100 laboratories and employs more than 8,100 people with a budget of approximately $1.2 billion. The Center in Peoria currently employs over 245 people and has a budget of more than $35 million annually. The multi-disciplinary research staff at NCAUR focuses on metabolic engineering, fermentation, food safety, environmental quality, biomaterials and processing technologies. The investments made in basic and applied research programs generate new products and technology from US agricultural commodities, contribute to the public good and continually improve our quality of life.

ARS recognizes that small businesses are critical to our economic recovery and strength, to building America's future, and to helping the United States compete in today's global marketplace. The staff of the Center also recognizes the fact that we are a part of the local community and that the investments we make have significant impacts on the local economy. In Fiscal Year (FY) 2009 thus far we have made over $231,000 in purchases from 19 different small businesses in the central Illinois region.

ARS strives to assist and protect the interests of small business concerns in order to preserve free competitive enterprise which will strengthen the overall economy of our nation. ARS annually exceeds all Federal Small Business Procurement Preference Program mandates and its Small Business Coordinators and procurement personnel are extremely conscientious in assisting Americans to create, build, and grow small businesses. Thus far in FY 2009, ARS has awarded 69% of its purchase contracts, over $91 million, to small or disadvantaged businesses. The numbers are similar in FY 2008 with 60%, over $90 million, going to small businesses.

In order to focus on the regional and local economic impacts of ARS' contracting, I would like to focus on the Midwest. A recent review of prime contracts through the third quarter showed that ARS' Midwest Area (MWA), of which the Peoria center is a part, is on course to not only meet but in most categories to far exceed its fiscal year 2009 small business goals. The goals were established through analyses of the proposed budget, changes in mission requirements, and actual accomplishments of the previous fiscal year. The complete results of this survey, as well as a complete analysis of ARS' contracting nationwide, can be found in the Appendix of my testimony. The data reveals that two-thirds of all MWA contract dollars have been awarded to small businesses. It also shows that the area has nearly tripled the 3% mandatory Federal-wide

goal of contract dollar amounts to be awarded to Service Disabled Veteran Owned Small Businesses.

Examples of ARS' Midwest Area's commitment to finding local small businesses and forging strong business partnerships are three NCAUR small business contractors in Central Illinois that have been providing supplies and services to the center for several years:

- **Mauer Stutz, Incorporated, Peoria, IL** - Mauer Stutz, Inc. is an Architect & Engineering Firm who has an Indefinite Delivery Indefinite Quantity contract with the Midwest Area Office. Task Orders are issued against this contract to provide Pre-Design, Design, Bidding and Construction Phase Services for construction projects. The contract is in the fifth year of a five year contract. Task Orders issued to Mauer Stutz average $40,000 annually.

- **Poly Generics Company, Creve Coeur, IL** - Poly Generics Company has been providing Environmental Protection Agency regulated hazardous waste pickup for over five years to NCAUR. Orders placed with Poly Generics Company average $33,000 annually.

- **Herr Petroleum, Galesburg, IL** - Herr Petroleum has been providing diesel for supplemental heating for the NCAUR facility for over two years. Orders placed with Herr Petroleum total approximately $23,000.

Additionally, a new five year Operations & Maintenance contract for NCAUR has just been awarded to Ameritac, a small business located in Concord, California, in the amount of $10,052,057. This contract provides security services, grounds maintenance, janitorial

maintenance, receptionist services, mail services, and the skilled trades that perform preventive and corrective maintenance on the facility. The contract staffs approximately 37 local employees, which has created job opportunities in Peoria. Materials used in direct support of the operation of the facility are also provided under this contract. A significant portion of those materials are purchased locally from small businesses.

Also in the current forecast, the Midwest Area office is negotiating a newly established 8(a) small business mentor-protégé arrangement between JM Industrial Supply and River City Construction, both in central Illinois, for parking lot resurfacing, roofing, tuckpointing, boiler repair, concrete replacement and electrical work at NCAUR. The estimated cost of this award is between $750,000 and $1,000,000.

The Center in Peoria was established by Congress in 1938 and has occupied the same building since that time. In addition to being one of its oldest, the facility is also one of ARS' largest at over 270,000 square feet. Currently we are in the midst of a major multi-phase modernization project. The contracts associated with this project also present opportunities for small businesses and are a boon to the local economy. The current modernization contractor is Hammer Logistics Incorporated, located in Caseyville, IL. The majority of work performed on the modernization contracts is subcontracted to local contractors and materials are purchased through local suppliers. From 2000 through 2009, $21.6 million in appropriated funds have been allocated to NCAUR for modernization. These construction projects create many jobs within the central Illinois region and stimulate the economy through material purchases.

The American Recovery and Reinvestment Act (ARRA) will significantly advance this modernization project as well as a large number of other ARS construction projects nationwide. The ARRA appropriated $176 million to ARS to conduct deferred maintenance projects on its facilities. The agency has selected 38 projects across the agency, of which Peoria is the largest. The ARS Facilities Division is currently developing plans to finish the third and fourth phases of the modernization project. These phases will accomplish a complete refurbishing of one of the wings of the center as well as deferred maintenance of critical mechanical, electrical and plumbing systems, and incidental repairs. The total projected cost of these phases is estimated to be $40.1 million dollars, which ARS estimates will create approximately 435 jobs. A tentative schedule for bid opening is this November with an anticipated award date of March 2010. As discussed earlier, ARS and the Midwest Area have a strong history of awarding significant portions of contracted dollars to small businesses and it is highly likely that this will continue as ARS works to obligate its ARRA funding.

In conclusion Mr. Chairman, ARS realizes that Federal procurement is associated directly with the economic well-being of firms, municipalities, cities, and in some cases, such as the Midwest Area, the welfare of several states or a region of the United States. The Agency, in concert with its Area offices, will continue to seek partnerships with small businesses and continue to not only meet but to far exceed Federal and Departmental small business goals.

Mr. Chairman and Ranking Member, thank you again for your invitation to testify today, I look forward to answering your questions.

Appendix

ARS Midwest Area Small Business Contracting Activity FY 2009

Midwest Area	Dollars	% of Total
Total Contracts	**$6,111,530.73**	
Small Business	**$4,080,363.22**	**67%**
8(a) Firms	$1,819,590.38	30%
Small Disadvantaged Business Concerns	$2,146,913.09	35%
Women-Owned Concerns	$184,883.21	3%
HUBZone Concerns	$283,350.70	5%
Service Disabled Veteran Owned Small Business	$496,708.86	8%

USDA Agricultural Research Service
Procurement Preference Program Totals
for Fiscal Year 2008 and 2009

	Actions	Dollars
Fiscal Year 2009		
Small Business	2,967	$91,150,611
Small Disadvanted Business	599	$31,928,068
8(a) Small Business	247	$17,623,097
Service Disabled Veteran Owned Small Business	215	$10,987,347
Women-Owned Small Business	484	$13,986,076
HUBZone Small Business	207	$32,401,344
AbilityOne (formerly JWOD)	32	$1,841,766
Total Procurements (includes Other Than Small Businesses)	4,955	$131,891,667

Fiscal Year 2009 October 1, 2008 through September 16, 2009

	Actions	Dollars
Fiscal Year 2008		
Small Business	3,585	$90,313,702
Small Disadvanted Business	639	$33,636,277
8(a) Small Business	337	$25,730,645
Service Disabled Veteran Owned Small Business	234	$7,425,613
Women-Owned Small Business	554	$20,457,859
HUBZone Small Business	271	$15,881,843
AbilityOne (Formerly JWOD)	33	$2,559,740
Total Procurements (includes Other Than Small Businesses)	5,884	$150,424,623

Statements of
Dr. Hans Seywald, President of AMA, Inc.

before the

Subcommittee on Contracting and Technology
House Committee on Small Businesses
House of Representatives

Thank you Congressman Glenn Nye, Congressman Aaron Schock, and distinguished members of the Small Business Subcommittee on Contracting and Technology.

Thank you for the invitation and the opportunity to testify before the Subcommittee on Contracting and Technology. Specifically, we are here to discuss our experience in working with NASA, our role in generating innovative technology, and our successes in stimulating local economic activity.

We are sincere in our hope that small business continues to be the driver of America's innovation engine. We seek not only to support NASA's mission to lead the world in Space, Exploration, Science, and Aeronautics, but also to help ensure America continues to be an economic leader in the 21st century. Headquartered in Hampton, VA, home is where the heart is. Our passion is to help NASA LaRC and Wallops Flight Facility in their honorable pursuits.

AMA's History

Analytical Mechanics Associates (AMA), Inc. is a small business celebrating almost 50 years of service to NASA and industry. We specialize in Engineering, Information Technology, Visualization, and Business Analytics. Armed with this skill-set and our passion to do excellent technical work, AMA has supported a broad range of past, present, and future NASA's missions including the Space Shuttle, International Space Station, the Orion Spacecraft and ARES Launch Vehicle Developments for the Constellation Program, Mars missions, Earth Science missions, and the Hyper-X flight experiment which flew at speeds up to Mach 10 to verify a novel engine concept.

AMA's current management, Dr. Renjith Kumar and myself (two aerospace engineers from Virginia Universities), took over the company in 1997 after economics forced the previous owners to sell the business. With just five employees and limited cash flow, the company was barely viable and could have folded at any time. But we didn't. Our primary motivation in taking over the company had little to do with the ambition of business. Like so many small technical firms in their infancy, the primary objective was to do cutting edge engineering, research, and development. Had the company gone out of business, an interesting Small Business Innovative Research grant that we were working on would have evaporated. That is our story on how two engineers evolved into entrepreneurs. We believe we are not alone. We believe this is the true spirit of small business in America.

The company survived, in part, because we were able to enter the company into the SBA 8(a) program. We were actually surprised that we were still solvent at the end of our first year. Not only had we not lost our life savings, we were able to pay ourselves a meager salary, and at the end of the

day made a profit. This exceeded our expectations. So we made a $5,000 donation to a local high school in an economically disadvantaged area. The school later told us it was the largest donation they had ever received.

AMA Today

Let's fast-forward 12 years. Today AMA has almost 100 employees. We have experts in multiple Aerospace Engineering disciplines, Information Technology, Business Analytics, Modeling and Simulation, and Visualization and Multi-media. The majority of our business falls under government contracts for NASA. Over the last few years, our commercial business has fluctuated between 10% and 30%, with an overall increasing trend.

Today, through NASA Langley, AMA is providing support in all of NASA's mission areas of Exploration, Science, and Aeronautics and played a pivotal role in two recent flight experiments launched from Wallops, the Max Launch Abort System and the Inflatable Re-entry Vehicle Experiment.

Technology Crossover and Incubation - From NASA to Industry and Back

In a hypercompetitive global market, it is not easy for a small business to establish a presence in the high-tech industry. We are making good progress. Could we have done it without our relationship with NASA? Absolutely not.

Before we could cross over into the commercial markets, we needed to assemble a critical mass of talent. The contract work at NASA enabled us to grow and retain these critical skills. In addition, being able to refer to our NASA work helped build the trust of new commercial clients. Today, most of the solutions that we provide to our commercial customers are spin-offs or extensions of technologies that we developed for our customers at NASA. Our work at NASA provides a steady funding stream, helping bridge funding gaps that we face in the much more volatile commercial sector.

In the commercial world, we provide services to Fortune 500 companies in our core competencies. We are also proud to provide local companies with IT software support and webpage design services.

AMA has utilized technology and expertise developed at NASA to create commercial markets that few would associate with the business of space or aeronautics. AMA has many examples of the cross-fertilization of technology between NASA and Industry:

ARTEMIS (Augmented Reality Technology for Minimally Invasive Surgery): At NASA we have developed Virtual Environments for space vehicle design. We help answer the questions, "Can an Astronaut reach this lever?", "Can the Astronaut fit here?". Without building a physical prototype, we are able to simulate this scenario in Virtual Reality. In industry, we have adopted this VR technology to Medical Surgery. Using similar tools and techniques, we built a prototype system to aid the surgeon performing radio frequency ablation of tumors.

LookShare (A system to help the Blind): AMA has created collaborative environments for NASA. These environments help NASA engineers and scientists collaboratively work together over the internet, performing design and analysis of space vehicles and missions. As part of our philanthropic efforts, AMA has invested and created a prototype system, "LookShare", to help the visually impaired. LookShare pairs a blind person with a sighted person, and uses the concept of tele-presence to allow them to work together. The blind person wears glasses with a built-in video camera. This

video is streamed over the internet to the sighted person who "guides" them. AMA's experience with NASA was key in the success of this R&D effort. This patent pending effort has been well received by the blind community.

Our Role in NASA's Public Outreach

We as a company work hard to educate the public on the incredible work performed by the entire NASA family. As our society continues to be overloaded by information, the NASA message must be compelling and engaging to catch public interest. AMA has played a strong role in NASA's Public Outreach and Education.

To capture the public's interest, AMA synthesizes state-of-the-art technology from leading companies (Apple, Google, Microsoft) to provide award winning solutions. AMA's agile, innovative culture has led to following recent successes for public outreach:

Lunar Electric Rover (LER) iPhone Application: One of NASA's very first iPhone applications, this program allows the public to "drive" NASA's Lunar Electric Rover (featured at President Obama' s Inauguration) and study the current design of the Lunar Outpost. The application will be downloadable via Apple's iTunes. The public will be able to understand NASA's design of a lunar outpost while having fun.

NASA's Mission Madness: Mission Madness was an event created to increase awareness of NASA's missions: past, present, and future. Sixty-four missions competed in a "March Madness" like tournament, with the public picking the winning mission. Widely considered a great success, over 750,000 votes from the public were recorded. The content was featured on numerous blogs and news channels. Interestingly, the contest also increased camaraderie among current NASA mission teams. Teams banded together to "vote" for their respective missions.

Our Role In Education

We as a company place high-importance on education and its role in the well-being of our community and country. We are privileged to help mold and educate future generations of aerospace and IT professionals through our internship programs, often times in collaboration with NASA. There is nothing that captures the imagination of young minds more than space flight.

Concluding Remarks

In conclusion, I would like to reiterate our sincere thanks for the opportunity to share our thoughts and story with this distinguished committee. We would like thank NASA for the continued support for almost 50 years. We are committed to the NASA mission and hope our efforts continue to help America pursue her highest goals. Thank you.

September 21, 2009

Testimony
Before House Small Business Subcommittee on
Contracting and Technology

Construction Development Services Inc (CDSI) began servicing the Hampton Roads area in 2000 performing residential and light commercial projects. In May of 2006, CDSI became certified as a small disadvantage business 8(a) general contractor. This certification has allowed us to diversify and perform different types of construction projects such as residential, institutional, commercial, and infrastructure. Each project has varied in cost and complexity with various scopes of work including roofing, masonry, site-work, HVAC, electrical, fire protection systems, sewage lift stations, and utilities. We've completed each project successfully by partnering with the Government and understanding their needs and requirements.

Our primary customer is the federal government at the military bases located in Hampton Roads and NASA Wallops Island. We currently service the following contracting offices:

Norfolk Naval Base
NASA Wallops Island
Little Creek Amphibious Base
Portsmouth Naval Shipyard/Medic Center
Langley, AFB

In the last three years we've completed over 75 different construction projects ranging from $500 to $4.5M, consistently employed 20-25 personnel, and employed approximately 75 different small, SDVOBs, woman owned, and large subcontractors, vendors and a multitude of trades-people. These projects have been traditional bid/build and design/build work with a firm-fixed-price. CDSI strives to know government contracting; as a result, we're able to adapt and use our in depth experience gained while working at other small businesses and Joe's experience as a Civil Engineer Corp Officer in the Navy (Seabees).

Our goal is to be the federal government's contractor of choice for any type of project including renovations, design-build, contingency operations or emergencies.

CDSI plans on achieving this by continuing to partner with the Federal Government and further solidifying our relationships with our bonding agent, banker and accounting firm. In addition to these relationships, we'll be competing for MACC, SABER and other multi-year contracts. We've been fortunate enough to have garnered several IQ contracts, and we feel this comes from getting the first job and succeeding each project thereafter. If mistakes are made (and we have), take the responsibility and get it corrected quickly (and we do).

September 21, 2009

CDSI recently completed Renovation to Launch Project Building X-85, NASA Wallops Island. This project was a yearlong construction renovation project. The facility's function is to launch various types of weather balloons conducting lower atmosphere research.

We demolished the existing facility down to its bare structural columns and concrete slab and removed all exterior and interior walls and utility systems in total. We then renovated the facility to include a new front entrance lobby area which required pile driving operations, new masonry/EIFS/storefront exterior, newly framed walls with interior wall, ceiling and floor finishes along with a completely new electrical and HVAC system, men/women bathrooms, three (3) 30' fabric type roll-up doors along with a new fire alarm and sprinkler systems. All work was incompliance with the latest ADA requirements.

The project involved fifteen (15) different subcontractors from both the Eastern shore and Hampton Roads areas. The project was valued at $1.5M creating a multitude of job opportunities for both CDSI and all of our vendors and subcontractors most (90%) of which were small businesses themselves and employing approximately 80 different people during the various construction phases of the project.

This project provided the scientists/technicians with far better working conditions, very modern finishes, amenities and utility systems with a better overall environment to conduct their research.

We look forward to participating in similar type construction projects that improve the quality of life for researchers and at the same time help the economic climate of the local area.

Statement of
Peter B. Johnsen
Chief Technology Officer
Biofuels Manufactures of Illinois, LLC
Arvens Technology, Inc.
Before the Subcommittee on Contracting and Technology
U.S. House Committee on Small Business
September 24, 2009

Mr. Chairman, Congressman Schock and members of the committee, thank you for the invitation to testify before you today on the importance of small businesses working with Federal research facilities to promote innovation and entrepreneurship. I believe that I may have a unique perspective to offer this committee in that I have been both a Director of a National Laboratory and am now involved in several small technology companies that are working with Federal research facilities.

I spent 20 years with the USDA Agricultural Research Service and 12 of those as Director of the National Center for Agricultural Utilization Research in Peoria, Illinois. As a scientist and administrator I was an early user of the 1986 National Technology Transfer Act - Cooperative Research and Development Agreement, or CRADA authority, to work with many companies to commercialize new discoveries. In addition, I testified before the House Agricultural Committee on ways to expand the technology transfer capability of ARS that resulted in legislation to expand the ability of small companies to commercialize USDA inventions. This language gave ARS research laboratories the authority to partner with private companies and use government pilot plant facilities to develop products and processes for commercial demonstration. In sum, I have seen first

hand the benefit, and even the necessity, of Federal laboratories working with the private sector in creating economic value from basic science discoveries.

While legal tools such at the Stevenson-Wydler Technology Innovation Act, the Bayh-Dole Act, the National Technology Transfer Act and other authorities have proven beneficial to both Federal laboratories and small business, there are some significant issues that could be addressed to enhance the capabilities of small businesses to advance the national research agenda leading to economic development.

Since leaving the government, I have been involved with several companies that needed to approach technology commercialization in very different ways. In one, we took fundamental knowledge discovered by the USDA laboratory and refined the concept to develop commercial production methods to manufacture an advanced bio-based product. Absorbent Technologies, Inc. makes ZEBA, a starch based 'hydrogel' that holds and releases water similar to a sponge below the soil, for use by plants and food crops on an as-needed basis. Each small granule holds 500 times its weight in water, nearly all of which is made available to the plant in response to plant root suction. By creating an "on-demand" moisture and nutrient reservoir, ZEBA not only reduces the level of water and nutrient inputs required, but also reduces plant stress resulting in greater yields and heartier, higher quality crops. This company made use of the USDA CRADA process early on and quickly achieved results that gave it the ability to obtain venture capital funding to bring its products to the marketplace. Today we are selling this innovative product for commercial agriculture and lawn and garden applications in more that 10

countries worldwide. The government created the basic idea and the private sector party provided expertise to develop a product and implemented commercialization efforts. This is a simple model for technology commercialization resulting in jobs and the creation of economic benefit from scientific discovery. But such successful innovations are not usually this straight forward. Often there are many complications on the way from the laboratory to the market place.

I also serve as Chief Technology Officer of Biofuels Manufactures of Illinois, LLC. BMI was formed to build and operate a biodiesel production facility in central Illinois. What distinguishes our effort is that we have been working with the USDA ARS to develop a new energy crop called Pennycress.

Pennycress is a member of the mustard family that has seeds with 36% oil, twice that of soybeans, and can be used to make a high quality biodiesel fuel. The crop is planted in the fall after corn harvest, grows as a winter annual and is harvested in late spring before soybean planting. Farming Pennycress uses traditional equipment and allows farmers to grow two crops in the year earning additional income. As a non-food crop that does not displace food crops from land or the marketplace, it avoids both the food vs. fuel and Indirect Land Use controversies completely.

The economic impact of this new energy crop is significant. A single 45 million gallon per year biodiesel plant will purchase $100 million of Pennycress seed each year. This is new money flowing into the local agricultural economy and has significant multiplier

effects on consumer purchasing and employment. Illinois alone has the land capacity for 18 such operations so the economic impact of Pennycress as an energy crop across the mid-west corn belt is extraordinary.

It was USDA research scientists who discovered the potential of Pennycress but they are, by the nature of their mission and legal authorities, unable to actually bring about commercialization of this remarkable new energy crop. Therefore, the only way for the nation to benefit from this discovery is for the government to collaborate with the private sector. However there are a number of issues that have made it very difficult for a small business like ours to work effectively with federal agencies to commercialize this new energy crop.

BMI and its partner R&D company, Arvens Technology, Inc. have made significant financial investments in both its own research activities and sponsoring work at two Federal laboratories and a state university through CRADA agreements. Our project requires research to optimize Pennycress farming and processing technology at least through the demonstration stage before private investors can be attracted to fund commercial operations. Our company has formed business relationships with farmers to begin large-scale production of Pennycress. In addition, we have developed processing methods for this unique crop. Clearly it takes significant up-front financial capital to create such a new energy crop, develop its logistics infrastructure and optimize processing technology. All of these investments must be made before revenue is generated.

Because this project meets both USDA and DOE strategic objectives in creating sustainable energy sources, we have applied for funding with our USDA research partners to advance this work. One of the requirements of these grant applications is that a 20% financial match be provided by the applicant. For small start-up businesses like ours, this is a major problem. We are currently providing funding to two Federal labs and a university but that does not count to meet the match requirement. It is ironic that BMI and is partner companies are funding USDA and university research rather than being able to obtain contracts from them to perform the important task of creating a new environmentally friendly, sustainable energy source that is in the nation's interest.

My first recommendation to the committee is to examine the policies that require small businesses to provide these significant financial matches in the grant application process. Large companies do not have a problem in making the financial match by providing "overhead' services that are part of a larger commercial enterprise. A small technology company cannot do this. This match requirement significantly limits small companies in the scope and duration of their project proposals. We can only propose projects up to the limit of our available financial resources to cover the required match. We believe that some of the most creative and capable technology companies are not competing equally for these research contracts because of this requirement. The elimination of this match requirement or at least making it proportional to the size and resources of the small technology business would ensure that such companies have full access to these contract opportunities.

A second problem that my company has run into, involves the requirements of the loan guarantee programs of USDA. We have been seeking commercial loans for the construction or our biodiesel plant. With the current lending climate and tight credit, private financing is difficult without some form of risk mitigation for the banks. We considered seeking assistance from the USDA Rural Development Agency under its Section 9003 BioRefinery Assistance Program but found that the process has several requirements that limit small companies like ours from applying for loan guarantees.

The loan program requires that both the borrowing company and a lending bank partner in the application process. The Agency will approve loan guarantees only for lenders of considerable size and experience in similar projects. This is particularly limiting for companies located in rural communities away from large money center, commercial banks. We have been able to put together a consortium of local community banks willing to work with us but none of them have the experience to be the lead institution necessary to satisfy the requirements of the RDA program.

My second recommendation is to examine Federal loan guarantee program policies and determine if they maximize the opportunities of both small businesses and local banks to create jobs and economic development based technology innovation and entrepreneurship. There should be an appropriate match between the requirements of the Agency and the size of the loan guarantee requested. Without some sort of "starter" program, local technology and financial organizations will not be able to develop the

capacity to participate in larger projects.

In my many years as a scientist in a university, government laboratory and private company I have seen the evolution of thinking and subsequent enactment of laws that enhance the ability of the nation to benefit from the pubic investment in science and technology. This has been an incremental process with improvements made as challenges and roadblocks are discovered and surmounted. I hope that today I have provided some information that this committee can consider in its work to maximize the opportunities of small businesses to work with Federal research laboratories that promotes entrepreneurship and innovation. Thank you for this opportunity to talk with you. I would be happy to answer any questions at the appropriate time.

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