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PROMOTING AMERICAN COMPETITIVENESS: FILLING JOBS TODAY AND TRAINING WORKERS FOR TOMORROW

HEARING

BEFORE THE

SUBCOMMITTEE ON COMPETITIVENESS, INNOVATION, AND EXPORT PROMOTION

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

ONE HUNDRED TWELFTH CONGRESS

SECOND SESSION

APRIL 17, 2012

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED TWELFTH CONGRESS

SECOND SESSION

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PROMOTING AMERICAN COMPETITIVENESS: FILLING JOBS TODAY AND TRAINING WORKERS FOR TOMORROW

TUESDAY, APRIL 17, 2012

U.S. SENATE,
SUBCOMMITTEE ON COMPETITIVENESS, INNOVATION, AND EXPORT PROMOTION,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The Committee met, pursuant to notice, at 10:06 a.m. in Room SR–253, Russell Senate Office Building, Hon. Amy Klobuchar, Chairman of the Subcommittee, presiding.

OPENING STATEMENT OF HON. AMY KLOBUCHAR, U.S. SENATOR FROM MINNESOTA

Senator KLOBUCHAR. Good morning. I want to thank all the witnesses and guests for being here for this important discussion about workforce competitiveness.

Senator Blunt is Ranking Republican and has worked hard on these issues as well. So we're excited to have this hearing, and we're glad Senator Warner is here as well.

We're going to be examining the role that training programs play in ensuring a highly-skilled workforce. And we'll be looking into the potential for building partnerships between government, industry, and the education community as a way of responding to the needs of both workers and employers.

I've certainly seen this in my state. I was at Dunwoody Technical Institute which has one and two-year degrees preparing students for technical jobs. And others—they are doing great things. Their Automotive Technician Apprenticeship Program has 100 percent placement rate. I've seen other programs throughout my state community colleges with 96 percent placement rates—Alexandria Tech in western Minnesota. So we've seen this all over the place.

And part of the issue we're seeing—which in some ways is a good problem to have as we see some stability and improvement in the economy—though we're not where we want to be—we're starting to see job openings. In my state, we are down to 5.7 percent unemployment. So we are really feeling it, particularly in the areas of things like welding, tool and die, computer skills, technical jobs.

And as I tell high school students these days, this is no longer your grandpa's vo-tech. These kids are learning skills that run computers that run major assembly lines. And many of them then

go back after getting a two-year degree to get other degrees and go on from there.

And so I see this as an exciting possibility for our country as the only way we're going to be able to compete on the international stage against companies and countries that are ramping up their technical training. We have to be doing the same, starting with science, technology, engineering, and math classes in the K through 12 area and then going on from there.

I have a bill with Senator Scott Brown and others—I know Senator Warner is on the bill—that doubles the STEM schools in this country and also looks at making it easier for companies to donate equipment to these types of programs in the post-secondary area.

We have with us today Bob Kill. He's the CEO of Enterprise Minnesota, a non-profit organization that represents small and midsize businesses in our state. This year, in the *Annual Poll of Businesses* by Enterprise Minnesota, nearly 6 out of 10 respondents said it was a challenge for them to attract workers with the skills that they need to fill the job. And that is what I'm hearing anecdotally throughout our state.

Part of this is also—I mentioned the high school level—is looking at how we can better integrate—and I look forward to hearing this—our community colleges with our high school programs, because we have—Secretary Duncan came out to Minnesota. Irondale High School in Minnesota is now directly working with the community college, and these kids are actually getting those degrees in high school. We're seeing that in other parts of the state as well.

So I am looking forward to hearing from our witnesses, and I'm going to turn it over to Senator Blunt for a few words and then Senator Warner.

Senator Blunt.

STATEMENT OF HON. ROY BLUNT, U.S. SENATOR FROM MISSOURI

Senator BLUNT. Thank you, Chairman. Thanks for holding this hearing. I believe in the interest of hearing from the witnesses, I'll submit my statement for the record. And I appreciate your leadership of this subcommittee and particularly bringing attention to this issue.

[The prepared statement of Senator Blunt follows:]

PREPARED STATEMENT OF HON. ROY BLUNT, U.S. SENATOR FROM MISSOURI

Thank you, Chairwoman Klobuchar, for yielding me this time and, more importantly, for hosting this hearing on this really important topic. I'm looking forward to hearing from both of our panels today, and I would like to give an especially warm welcome to my fellow Missourian Don Nissanka, who will be on our second panel to offer us insight into current and future workforce and employment issues.

For too many years, too many Americans have been telling us that they're struggling to find good quality, good paying, private sector jobs. Our panels today will have keen insights into a very important piece of that equation, which revolves around the structural barriers to training and maintaining a 21st Century workforce.

Even with an unemployment rate higher than the historical average, there are a number of companies that are either ready to start hiring or currently have job openings they are unable to fill. Specifically, one recent estimate put the number of unfilled manufacturing jobs as high as 600,000. I know we have at least one or two panelists today who are going to talk about the workforce skills gap deficit and

what it means to our current employment and productivity levels in the short and long terms. I'm looking forward to hearing from them.

As we continue to compete in the global marketplace we cannot overlook the fact that jobs now follow talent. Countries with the strongest talent supply have a significant advantage in attracting and keeping jobs.

We must look toward the future with an eye on instituting policies, and streamlining regulations, to create steady stream of talented, high-skilled workers. Building that talent supply depends, foremost, on education.

According to a Georgetown University study, since 1973 the percentage of U.S. jobs that required post-secondary education rose from 28 percent to 59 percent. And they forecast that disparity to continue rising into the future. The authors stated that post-secondary education has become the gatekeeper to the middle class.

This current and growing education gap is not limited to the number of college graduates we are producing, especially in the ever important math and science fields. It also reaches into sector-specific job training programs, such as apprenticeships, on which employers in the increasingly high-tech manufacturing sector rely.

And the downstream effects of a robust, competitive and growing manufacturing sector have a multiplier effect which not only creates more jobs along the supply chain and distribution channels but is also our best avenue for innovation.

I am looking forward to hearing from all of our panelists and delving in to these structural issues, so again, thank you Senator Klobuchar for holding this topical and important hearing.

Senator KLOBUCHAR. Thank you very much.

Senator Warner.

STATEMENT OF HON. MARK R. WARNER, U.S. SENATOR FROM VIRGINIA

Senator WARNER. Thank you, Madam Chair. I know I should follow Senator Blunt's lead, but I just can't help myself.

[Laughter.]

Senator WARNER. I'm glad you brought—I will watch—boy, it went from 5 minutes to 3 minutes right away on the clock here all of a sudden.

[Laughter.]

Senator WARNER. I'm glad to hear from the witnesses. I'm looking forward to hearing Secretary Oates. We had a chance to visit on another issue recently.

I want to thank the Chair as well for her focus on this issue. I think it's terribly important. The Chair has had to listen to me many, many times talk about this and that when I used to have a real job being Governor. And we talked about a lot of the things we were able to get done.

One of the areas that was the most frustrating as a governor was workforce training and—you know, had all these wonderful ideas about consolidation and efforts and found as I got into this the enormous challenges trying to consolidate all the various Federal programs. I think the GAO has said we've got 47 different Federal workforce training programs. This area, I think, is ripe for consolidation and more local and state flexibility, particularly to make sure that we're training for the jobs that exist in the community. And that means really having to have a strong partnership with businesses.

And I've got a minute-40. I'll do this in less than that. The one area that we did make some progress in in Virginia, though, was taking those kids in high school who we had identified as probably not having—looking at going on to college, going to them in about that sophomore and junior year of high school and saying, "If you will go ahead and graduate from our high school, meet our high

standards, we'll guarantee you not only a high school diploma, but also an industry certification, because that becomes now the gating tool to a job going forward. And if you don't finish that industry certification by the time you graduate from high school, we'll give you a free semester at the community college."

Now, this didn't move us to a full K–13 apprenticeship program the way the Germans have, which is actually, I think, a fairly good model. But it did take to a K–12 1/2 system, and we were able, out of a cohort of about 78,000 graduating high school seniors, to move from 4,000 to 11,000 kids getting industry certification.

So, you know, one small step in the right direction, and, again, something, whether it's in Missouri or whether it's in Minnesota—you know, this is an area that I think is ripe for new ideas and an area where we can clearly learn from the private sector. And I hope it's an area that we can work with our colleagues on the HELP Committee at looking at trying to do some consolidation, trying to get those 47 programs down to a more manageable number.

So with 15 seconds left, I will go ahead and submit the 18-minute opening statement I had for the record and thank again the Chair for her leadership on this issue.

Senator KLOBUCHAR. Are there any objections to that statement being included? There are not.

[The prepared statement of Senator Warner follows:]

PREPARED STATEMENT OF HON. MARK WARNER, U.S. SENATOR FROM VIRGINIA

Chairman Klobuchar, thank you for holding this hearing. Before I was a Senator, I served as Governor of the Commonwealth of Virginia. In that capacity, I became well acquainted with the vital role a skilled and trained workforce plays in keeping not only Virginia, but also our Nation as a whole, competitive.

As Governor, I recognized the need for a tighter organized, better coordinated workforce assistance apparatus. Before my tenure, workforce development efforts were scattered across a number of state agencies and administered by an inefficient Virginia Workforce Council.

In response, I proposed—and worked closely with our Republican State Legislature to enact—legislation that reduced the size of the Workforce Council, shifted Virginia to a demand-driven workforce system guided by employer needs, and created better performance measures for the regional boards responsible for overseeing training programs throughout the state.

To help jumpstart the economy of rural Virginia, I also developed the Virginia Works program. Through this program, we created Regional Workforce Consortium Grants, which funneled $2 million to employer-led consortiums that developed innovative programs to train the local workforce in the skills that employers needed at that moment in time, but also reflected employer needs over the next 5 years.

For areas that were going through particularly rough economic times, we developed the Economic Crisis Strike Force, which established one-stop shops for workers to obtain assistance from a variety of government agencies and private sector groups.

These one-stops were extremely successful, serving nearly 87,000 clients and producing more than 1,713 job placements.

It is my hope that the Federal government will one day be able to recreate Virginia's successes. As GAO has noted, there are 47 Federal programs that seek to address workforce training and many of the objectives and target populations of these programs have overlap. There are 21 workforce training programs at the U.S. Department of Labor alone. An additional 11 programs can be found at the U.S. Department of Education and 7 are located within the U.S. Department of Health and Human Services. The Departments of Interior, Agriculture, Defense, Justice, VA, and the Environmental Protection Agency all have at least one workforce training program. The strangest thing is that many of these programs seek to assist the same populations of Americans but we really do not have long term data which proves which programs provide the most value to participants or to taxpayers. Sure-

ly, we can do better than this in serving the needs of a diverse population of Americans.

I know that some have expressed concerns about eliminating Federal workforce training programs because they are worried that these services will simply disappear. That is not my objective. However, I do believe that by consolidating programs we can eventually have more efficient and effective training programs that all Americans can utilize as needed. At a minimum, we should focus on reducing administrative costs and overlap between different Federal departments.

If we do not address these important issues, then we risk continuing to fund an inefficient system which is not doing enough to train young people who need a pathway towards getting key industry certifications while they are still in school. Nor is our current patchwork of programs doing enough to meet the needs of adults who are already in the workforce and need to be able to develop new skills in order to get better jobs or to improve their lives. We have to make sure our programs work well because at the end of the day, the U.S. needs a well-trained, well educated workforce to stay competitive with other countries.

This work was not easy to do in Virginia, and I am sure it will be a significant challenge for the Federal government to solve. But it's not something we can ignore much longer. Madam Chairwoman, I hope that this is an issue we can continue to work on with other Senators, particularly those on the Senate HELP Committee.

Thank you.

Senator KLOBUCHAR. We will get started. I'll introduce our panelists.

Mr. Kilmer, Mr. Roger Kilmer, is the Director of the Manufacturing Extension Partnership program at the Department of Commerce's National Institute of Standards and Technology, better known as NIST. Mr. Kilmer has been with the MEP program since 1993 and with NIST since 1974. He has extensive experience working with manufacturing and technology industries through the Department of Commerce.

Ms. Jane Oates is the Assistant Secretary for Employment and Training at the Department of Labor. Ms. Oates directs the Employment and Training Administration which helps design and deliver high-quality training and employment programs for our Nation's workers.

And then Ms. Martha Kanter is the Under Secretary of Education and directs the Office of Vocational and Adult Education at the Department of Education. She oversees policies, programs, and activities at the Department of Education related to post-secondary education, as well as adult and career technical education.

So we'll start with Mr. Kilmer.

STATEMENT OF ROGER D. KILMER, DIRECTOR, HOLLINGS MANUFACTURING EXTENSION PARTNERSHIP, NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, U.S. DEPARTMENT OF COMMERCE

Mr. KILMER. Thank you.

Madam Chair Klobuchar, Ranking Member Blunt, and members of the Subcommittee, thank you for the opportunity to appear before you today to discuss the work the Hollings Manufacturing Extension Partnership, known as MEP, is doing to address the workforce training and skills required for jobs in advanced manufacturing.

Manufacturing matters, Madam Chair. As the President has said, an economy built to last demands that we keep doing everything we can to keep strengthening American manufacturing. As the National Science and Technology Council's National Strategic Plan for Advanced Manufacturing states, while unskilled labor was

once the mainstay of the manufacturing labor workforce, as advanced manufacturing supersedes traditional manufacturing and domestic manufacturers deepen their investment in advanced technologies, the skills required for manufacturing jobs are rising.

Manufacturing employers perceive a skills gap. Sixty-seven percent of companies surveyed recently by an industry association reported moderate to serious shortages in the availability of qualified workers, even in a period of elevated general unemployment. The report further states that programs to address workforce should be targeted particularly toward the needs of small manufacturing enterprises, or SMEs, which are MEP's focus. As more advanced manufacturing technology is deployed, training becomes more expensive and difficult for companies, especially SMEs.

MEP has been working to support U.S. workers in these SMEs for a number of years. In order to support the U.S. workforce, MEP is addressing what skills manufacturers need to perform the advanced manufacturing jobs of the future.

Let me describe what MEP is doing to address these challenges. Since its inception in 1988, MEP has focused on solving American manufacturers' challenges and identifying opportunities for growth. MEP offers small manufacturers resources centered in five areas critical to their global competitiveness: technology acceleration, supplier development, sustainability, workforce, and continuous improvement.

MEP addresses workforce development and training in multiple ways. For example, MEP works with manufacturers to adopt a culture of innovation and product development to help increase their competitiveness. MEP is working to create and retain jobs across the country through our partnerships with state and local Workforce Investment Boards, or WIBs.

Examples of successes include the California MEP's collaboration with eight local WIBs. The MEP center and WIBs worked with over 125 manufacturers across southern California to help companies address these risks. Aggregated results reported included nearly 350 jobs created and over 1,800 jobs retained, nearly $60 million in increased sales and $50 million of sales retained.

A joint training and employment notice issued by both MEP and DOL is scheduled to be released today, April 17, to describe how WIBs and MEP centers can continue to expand their collaborative partnerships. And, we will soon be issuing a joint solicitation for proposals to accelerate innovation and job creation in manufacturing.

Additionally, MEP is a partner in workforce certifications, working with the NAM Manufacturing Institute, looking at how the standardization of workforce credentials can streamline the process of workforce training, recruitment, and hiring for small manufacturers, taking out some of the risks of finding workers for those manufacturing jobs. MEP also works with the American Association of Community Colleges to provide information and best practices in manufacturing training delivery and the development of curricula for today's advanced manufacturing jobs.

To further support the workforce needs of America's smaller manufacturers, MEP created a workforce development model termed Strategic Management, Acquisition and Retention of Tal-

ent, known as SMART Talent, that encompasses both technology and a culture of learning within manufacturing operations. The MEP model is being developed with small manufacturers in mind, designed to address resource limitations and position workforce in a strategic framework for business.

It is our intent to use SMART Talent to help companies think about workforce investments in exactly the same way they think about other operational investments. MEP centers are piloting the first module on recruitment and will deploy the SMART Talent recruitment module to the MEP system later this summer.

MEP has created this model because we must focus on addressing the manufacturing workforce training challenges that can no longer be addressed with the standard training resources available. As MEP creates an environment of rapid manufacturing innovation, we must also create workforce strategies and tools specifically for small manufacturers that will support their adoption of sustainable, high-tech production.

As we grow domestic industry, replace retiring workers, encourage exporting, and bring manufacturing back into the U.S. from abroad, we must ensure that we have the workforce manufacturers need with skills in sophisticated manufacturing processes, the kind of advanced manufacturing that MEP is supporting.

Thank you again for the opportunity to testify today, and I'd be happy to answer any questions you might have.

[The prepared statement of Mr. Kilmer follows:]

PREPARED STATEMENT OF ROGER D. KILMER, DIRECTOR, HOLLINGS MANUFACTURING EXTENSION PARTNERSHIP, NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, U.S. DEPARTMENT OF COMMERCE

Madam Chair Klobuchar, Ranking Member Blunt and members of the Subcommittee, thank you for the opportunity to appear before you today to discuss the work the Hollings Manufacturing Extension Partnership (MEP) is doing to address the workforce training and skills required for jobs in advanced manufacturing. MEP is part of the Department of Commerce's (DOC) National Institute of Standards and Technology (NIST).

Advanced manufacturing—and the jobs it creates—are critical to advancing America's economy. After losing millions of manufacturing jobs in the previous decade, the United States (U.S.) manufacturing sector has added 458,000 jobs over the past 24 months, with 120,000 in the first three months of 2012 alone.[1] Both U.S. and foreign-based manufacturers are increasingly choosing the U.S. as the next location to build manufacturing facilities, which will create even more jobs.

In his State of the Union address this year, the President made it clear that supporting American manufacturing will remain a top priority of the Administration. When the Secretary of Commerce set out his priorities this year, he was determined to harness the great potential of the Commerce Department in support of driving advanced manufacturing, exports and business investment. His stated goal as Secretary of Commerce is simple—"to help American businesses build it here and sell it everywhere."

As the National Science and Technology Council's February 2012 National Strategic Plan for Advanced Manufacturing[2] states, while unskilled labor was once the mainstay of the manufacturing labor force, as advanced manufacturing supersedes traditional manufacturing, and domestic manufacturers deepen their investment in advanced technologies, the skill requirements for manufacturing jobs are rising. Manufacturing employers perceive a skills gap: 67 percent of companies surveyed recently by an industry association reported moderate to serious shortages in the

[1] Bureau of Labor Statistics, calculated from Employment, Hours, and Earnings database, April 6, 2012

[2] *http://www.whitehouse.gov/sites/default/files/microsites/ostp/iam_advancedmanufacturing_strategicplan_2012.pdf.*

availability of qualified workers, even in a period of elevated general unemployment.[3]

The report further states that programs to address workforce needs should be targeted particularly toward the workforce needs of Small Manufacturing Enterprises (SMEs). As more advanced manufacturing technology is deployed, on-the-job training becomes more expensive and difficult for companies to provide, especially SMEs.

Additionally, the Conference Board's CEO Challenge 2012[4] survey ranked *innovation* first in the challenges faced by manufacturers, with *human capital* coming in second. However, manufacturers view the two as being intrinsically linked as they strive for innovation and growth. MEP has been working to support U.S. workers for a number of years and continues to support the Nation's small manufacturers' drive toward innovation through workforce development.

In order to support the U.S. workforce, MEP is addressing what skills manufacturers need to perform the advanced manufacturing jobs of the future. A recent study from Boston College[5] indicates that manufacturers are less likely than all other businesses to develop employee career plans, project and plan for pending retirements, develop succession plans, understand current competencies of their existing workforce, or anticipate new skill needs. This illustrates how important it is for an intermediary like MEP to work closely with manufacturers on these issues.

Let me describe what MEP is doing to address these challenges. MEP's vision is to strengthen American manufacturing—accelerating its ongoing transformation into a more efficient and powerful engine of innovation driving economic growth and job creation. Since its inception in 1988, MEP has focused, with its 60 centers and 1,300 field staff serving as trusted business advisors, on solving American manufacturers' challenges and identifying opportunities for growth. MEP offers small manufacturers a wealth of unique and effective resources centered on five areas critical to their global competitiveness: *technology acceleration, supplier development, sustainability, workforce and continuous improvement.* As a public/private partnership, MEP delivers a high return on investment for taxpayers. In Fiscal Year 2010, MEP interacted with over 34,000 manufacturers and did project work with nearly 10,000 clients that resulted in more than $3.6 billion in new sales, $1.1 billion in cost savings, and the creation or retention of more than 52,000 jobs.[6]

Over the last several years, MEP has focused extensively on developing an integrated set of strategies and tools that manufacturers can use to strengthen their competitiveness. Since workers are a critical part of manufacturing's success, workforce development and training must be an integral component of these strategies. The changes wrought by technology, globalization and demographics have and will continue to radically change what manufacturing employees need to know and what manufacturers demand of them in order to innovate and maintain a competitive position. MEP addresses workforce development and training in multiple ways.

For example, MEP works with manufacturers to adopt a culture of innovation and product development to help increase the competitiveness of U.S. manufacturing. Since January 2010, we have hosted 27 Innovation Engineering Leadership Institutes with a total of 3,581 attendees. During this three day training, we teach manufacturers and their key employees the importance of innovation and how to instill it into the culture of their company, so that every manufacturing employee is innovating in their job every day. We also expose them to the tools necessary to cycle new product ideas in quick, easy stages to minimize risk and maximize their return on investment. For calendar year 2012, we have already run five Innovation Engineering Leadership Institutes and will hold an additional 15.

Another example is the Federal partnership initiative on the Economy, Energy, and Environment, or E3, which providing participating companies with customized assessments of their production processes, implementing projects that reduce energy consumption and increase productivity, and training workers in environmentally-friendly manufacturing practices.

The Alabama Technology Network, or ATN, which is MEP's Alabama Center partnership, is providing sustainability training to firms participating in E3 with grants from the Alabama State Energy Sector Partnership and from the Department of Labor's American Recovery and Reinvestment Act High Growth and Emerging Indus-

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[3] Deloitte Consulting LLP, Manufacturing Institute (2011), Boiling Point? The skills gap in U.S. manufacturing.

[4] *https://www.conference-board.org/publications/publicationdetail.cfm?publicationid=2152.*

[5] Talent Pressures and the Aging Workforce: Responsive Action Steps for the Manufacturing Sector, The Sloan Center on Aging and Work at Boston College, 2009. *http://www.bc.edu/research/agingandwork/.*

[6] 2010/2011 Manufacturing Extension Partnership Impact Numbers *www.nist.gov/mep/reports.cfm.*

tries initiative. This training includes lean and clean value stream mapping, energy efficiency best practices, environmental factors, and executive overviews for ISO 14001 environmental management standards. Thus far, over 100 people have been trained in sustainability practices, with a target of 500 trained by September of 2012.

MEP is working to create and retain jobs across the country through our partnerships with state and local Workforce Investment Boards (WIBs). MEP Centers and WIBs make great partners in keeping people, businesses and economies working. Examples of successes between WIBs and MEP include the California Manufacturing Technology Center's collaboration with eight local WIBs in 2010 and 2011. The MEP center and WIBs worked with over 125 manufacturers across southern California to help companies address risks before these risks became acute. The work included a wide range of activities such as business strategy assistance, helping companies replace lost customers by pursuing new customers and new markets, assisting with the deployment of new technologies, and providing quality and process improvements. Aggregated results reported by the clients included nearly 350 jobs created and over 1,800 jobs retained, nearly $60 million of increased sales and nearly $50 million of sales retained. A joint Training and Employment Notice, issued by both MEP and the Department of Labor's Employment and Training Administration, is scheduled to be released today, April 17, to describe how WIBs and MEP centers can continue to expand their collaborative partnerships, and we will soon be issuing a joint solicitation for proposals, along with the Economic Development Administration, the Small Business Administration, the Department of Energy as well as the Department of Labor, for grants to accelerate innovation and job creation in American manufacturing. Additionally, MEP is a partner in workforce certifications, working with the Manufacturing Institute of the National Association of Manufacturers (NAM) to create awareness of the NAM-endorsed Manufacturing Skills Certification System and how the standardization of workforce credentials can streamline the process of workforce training, recruitment, and hiring for small manufacturers, taking out some of the risk of hiring workers for middle skill manufacturing jobs. MEP also works with the American Association of Community Colleges and their two-year college members to provide information and best practices in manufacturing training delivery and the development of curricula for today's advanced manufacturing jobs.

To further support the workforce needs of America's smaller manufacturers, MEP is moving from an incremental approach in workforce development, to a full-scale one, with the creation of a workforce development model that encompasses both what we have termed Strategic Management, Acquisition and Retention of Talent known as SMARTalent technology and a culture of learning within manufacturing operations. The MEP model is being developed with the small manufacturer in mind—designed to address resource limitations and position workforce in a strategic framework for business. It is our intent to use SMARTalent to help companies think about workforce investments in exactly the same way one thinks about investments in new production technologies or markets, and to gather data on workforce investments using analytics, just as manufacturers do for lean, quality and other investment calculations. This analysis will help define the true value of human capital by evaluating both tangible and intangible results such as reduced turnover, improved customer service, new product ideation, patents, shorter cycle times in problem-solving, and reduced liability costs, just to name a few, and to do so as an integrated part of an overall strategy for business growth. MEP centers are piloting the first module on recruitment to assess the functionality and value of our model. Once these assessments are completed, we will begin to deploy the SMARTalent recruitment module—an on-line tool to analyze the jobs needed to meet future needs for the manufacturers and skills required to fill those jobs—to the MEP system later this summer.

MEP has created this model because we must focus on addressing the manufacturing workforce training requirements that can no longer be scaled up to the extent needed with the standard training resources available. As MEP creates an environment of rapid manufacturing innovation, we must also create workforce strategies and tools specifically for small manufacturers that will support their adoption of sustainable, high-tech production and increased exporting. As we grow domestic industry, replace retiring workers, encourage exporting, and bring manufacturing back into the U.S. from abroad, we must ensure that we have the workforce manufacturers need with skills in sophisticated manufacturing processes—the kind of advanced manufacturing that MEP is supporting.

With the workforce strategies MEP has developed and tools such as SMARTalent, American manufacturing growth will be supported through its most unique asset—the workforce.

In conclusion, the MEP approach is holistic, starting with a focus on the manufacturers, and then supporting manufacturers' growth through next generation strategies, technology and partnerships that can move them quickly from 20th century operations to 21st century success.

Thank you again, for the opportunity to testify today, I would be happy to answer any questions you may have.

Senator KLOBUCHAR. Thank you.

Ms. Oates.

STATEMENT OF JANE OATES, ASSISTANT SECRETARY, EMPLOYMENT AND TRAINING ADMINISTRATION, U.S. DEPARTMENT OF LABOR

Ms. OATES. Thank you, Chairwoman Klobuchar and Ranking Member Blunt and Senator Warner, for inviting us here today and especially together. We really like being together, the three of us.

The manufacturing sector alone has created 470,000 jobs since January of 2010. According to BLS, a number of subsectors within the manufacturing industry are projected to be among the top 10 fastest growing industry sectors over the next decade.

The public workforce system plays a leadership role in developing training programs that meet employer needs for skilled workers. Through the Workforce Investment Act, the Department provides extensive reemployment assistance to vulnerable populations disproportionately impacted by economic downturns as well as those individuals who were in middle or high-skill jobs and are now unemployed.

Last year alone, 39 million individuals were served by the public workforce system. The system's dual customer approach aligns job seeker skills with the employers' needs through strategies such as on-the-job training, which uses Federal resources to encourage employers to hire additional full time workers while helping participants improve their chances for economic success.

The Department is also actively building partnerships on the Federal, State, and local levels to improve service delivery across programs more effectively to benefit individuals and employers and spur economic growth and job creation. We're continually seeking opportunities to develop joint administrative guidance as well as leveraging resources.

For example, as Roger just said, we're publishing joint guidance with Commerce today so that every member of our system knows about his MEP programs. Another initiative that Roger mentioned, the Jobs Innovation Accelerator Challenge that was launched this year, was a $37 million collaboration with Commerce and the Small Business Administration to support the advancement of 20 high-growth regional industry clusters in advanced manufacturing, IT, and aerospace.

Of note is that the Full Employment Council in Kansas City, Senator Blunt, your area, and its partners received a grant in doing this, and they're really hitting the ball out of the park. They're doing a great job in getting people who didn't envision themselves in that industry jobs today. Roger mentioned we're going to do a new one this spring, and we hope all of your states will apply.

We've built on an initiative started in the last administration by developing competency models in economically vital industries such

as energy and healthcare. The Advanced Manufacturing Competency Model outlines the skills necessary to pursue a successful career in the industry and was done in partnership with NAM and the National Council for Advanced Manufacturing and the Society of Manufacturing Engineers.

As part of our focus on skills attainment, the Department has set a goal to increase credential attainment by 10 percent among workforce system customers by September 2013. Workers who attain industry-recognized credentials have a demonstrated skill set to provide to prospective employers. For employers, they know what they're getting when they hire somebody.

As my colleague, Martha Kanter, will explain, we're engaging community and technical colleges in our skills training efforts. In the Fiscal Year 2013 budget request, the President is proposing an $8 billion Community College to Career Fund that partners educational institutions with businesses to satisfy employer needs for a ready skilled workforce, and we'll co-administer that with the Department of Education if the Senate and House decide to give us any portion of that.

The Community College to Career Fund builds on the Trade Adjustment Assistance Community College Capacity Building Grants. Through those TAACCCT grants, the Department will invest $2 billion over 4 years to assist two-year degree granting institutions to begin with the end in mind, to build curriculum with employers from the start that will give the employers the skilled workforce that they need.

We're funding nine grants in Round 1, focusing on the manufacturing industry. And I want to point out that we've given over $90 million just for manufacturing, because those grants were the most impactful and had the best employer support.

The Department also has invested $342 million in competitive grants to provide training and job placement in industries for which employers are currently using H–1B visa holders to hire temporary high-skilled foreign workers. Manufacturing is among the top 10 industries where H–1B visas are requested by business. We can fill that gap with American workers with the right training.

With approximately $2.2 million in H–1B grants, NIMS is currently working with manufacturing companies to help 425 unemployed individuals in southern California, in Chicago, in Alabama, and in other locations across the country to get the credentials to become computer numerical control machine operators, a skilled occupation with a promising career path and positions vacant today.

In conclusion, we've tried to leverage the generous appropriations that you've given us so that employers find the skilled workers they need in manufacturing and other sectors.

Thank you to the Subcommittee for giving us this opportunity, and like Roger and Martha, we'll look forward to your questions.

[The prepared statement of Ms. Oates follows:]

PREPARED STATEMENT OF JANE OATES, ASSISTANT SECRETARY, EMPLOYMENT AND TRAINING ADMINISTRATION, U.S. DEPARTMENT OF LABOR

Introduction

Chairman Klobuchar, Ranking Member Blunt and Members of the Subcommittee, thank you for inviting me to testify about the work we are doing at the Department of Labor (Department).

To help create an economy that is built to last, the Department is working to ensure employers have access to the skilled workforce they need to fill in-demand positions in industries such as advanced manufacturing. President Obama believes that we must ensure that the next generation of products are not only invented here in the United States, but manufactured here as well. A growing and vibrant manufacturing sector is key to innovation, our global competitiveness and creation of good-paying American jobs. The Department is supporting these efforts by leveraging robust partnerships across Federal agencies, aligning the national network of almost 3,000 One-Stop Career Centers and their partners with local and regional labor market needs, strategically awarding competitive grants, engaging community colleges for technical skills training, and customizing training to meet the needs of employers and workers. The Department also continues to participate in several interagency efforts to promote the manufacturing industry.

Manufacturing Skills

The unemployment rate has fallen steadily from its peak of 10 percent in October 2009 to 8.2 percent in March 2012. Since February 2010, the economy has generated 4 million private sector jobs. The manufacturing sector alone has created 470,000 jobs since January 2010. Manufacturers currently employ nearly 12 million workers, mostly in jobs with good wages and benefits. Over four million manufacturing workers are employed in small to medium-sized manufacturing enterprises (SMEs), which comprise 98 percent of manufacturing firms overall. As President Obama noted in the State of the Union, "American manufacturers are hiring again, creating jobs for the first time since the late 1990s". In fact, according to the Bureau of Labor Statistics, a number of sub-sectors within the manufacturing industry are projected to be among the top ten fastest growing over the next decade.

While signs point to continued improvement and job growth, evidence shows that both the lack of demand for workers and a skills mismatch will continue to contribute to the unemployment rate. Some sectors of the economy, including manufacturing, have been affected by a skills mismatch more than others. Recent data from the Bureau of Labor Statistics indicate that occupations that usually require a post-secondary vocational award or a post-secondary degree for entry are expected to account for about 37 percent of all new jobs from 2010 to 2020. Middle and high skilled workers will be critical to meeting manufacturing employers' needs. If current graduation and credential attainment rates continue at their low levels, a skills mismatch could continue to play a role in unemployment in the manufacturing industry, even as demand grows in components of this important sector.

The workforce system is playing a leadership role in developing training programs that better meet employer needs for skilled workers. These programs help workers retain or obtain good jobs upon completion of their training, and contribute to increasing productivity and job growth.

The Public Workforce System

The national network of One-Stop Career Centers serves as the foundation of the public workforce investment system. The Department provides oversight and administrative guidance for this network and strongly encourages the alignment of workforce development activities with state and regional economic development plans to ensure that education and training and employment services support anticipated industry growth and employment opportunities.

Job training is integral to the success of job creation initiatives, and skills and knowledge are important drivers of economic growth. The workforce system provides extensive reemployment assistance to vulnerable populations disproportionately impacted by economic downturns, as well as those first time unemployed individuals who were in middle and high skill jobs. Last year alone, 39 million individuals were served by the public workforce system. Most of these individuals received job search assistance, career counseling, and other employment services, or unemployment benefits, and nearly 500,000 participated in Workforce Investment Act-funded training. From July 2010 through June 2011, nearly 70 percent of individuals who completed WIA Adult and Dislocated Worker training became employed within one quarter after program completion. In the same performance period, 62.5 percent of youth who were enrolled in WIA training received a degree or credential.

Alignment of the workforce's skills and abilities with employers' needs is an essential component to our economic recovery and long-term competitiveness. This dual customer approach includes strategies such as on-the-job training that use Federal resources to encourage employers to explore the possibility of hiring additional full-time workers while helping participants improve their chances for economic success. The Department is providing technical assistance to help the public workforce system better engage employer customers. The Department believes that stronger employer partnerships will lead to improved employment and retention outcomes.

Promoting Robust Partnerships to Leverage Resources

We are actively working across Federal agencies to better align resources and to ensure effective service delivery. For example, our Fiscal Year 2013 Budget includes proposals to help all dislocated workers find new jobs and to develop single access points for job seekers to access all employment and training services. Furthermore, the Departments of Labor, Health and Human Services, Education, Commerce and the Small Business Administration, among others, are continually seeking opportunities to develop joint administrative guidance to state and local grantees, or to leverage available resources to encourage partnerships and improve models for delivering quality services across programs at lower costs. These partnerships allow individuals and employers to benefit from additional services and, most importantly, to spur job creation and economic growth. We understand that we need to do more with less, which makes partnerships at all levels—Federal, state, and local—critical to our continued investment in a competitive workforce.

Manufacturing Extension Partnership

Today, we are publishing joint guidance with the Department of Commerce's Manufacturing Extension Partnership (MEP) to encourage the public workforce system to partner locally with MEP programs to provide assistance to Small Manufacturing Enterprises (SMEs) to support economic growth while preserving and creating jobs.

As part of the churning that occurs in any healthy economy, many manufacturing businesses, especially SMEs, continually face challenges that, if not addressed, can ultimately lead to downsizing. When faced with the possibility of layoffs, the state and local workforce investment system can step in to assist workers in returning to employment as quickly as possible, or potentially preventing layoffs altogether by working closely with the employer. Such engagements have been facilitated in part through the Federal-state-sponsored MEP program, which works with SMEs to help them create and retain jobs, increase their profits and export their goods.

In South Carolina the state workforce agency requires that the state MEP review any manufacturer who applies for WIA funds for Incumbent Worker Training. This allows MEPs to access additional resources when significant business risks are identified, but importantly, helps them to design effective training for workers to maintain competitiveness.

The Jobs and Innovation Accelerator Challenge

An example of a Federal partnership to support economic development driven by local or regional needs is a partnership between the Department and Commerce's Economic Development Administration and the Small Business Administration to launch the Jobs and Innovation Accelerator Challenge. This $37 million initiative supports grants for the advancement of 20 high-growth, regional industry clusters in order to promote development in areas such as advanced manufacturing, information technology, aerospace and clean technology. The projects are driven by communities that identify the economic strengths of their areas and encompass urban and regional areas in 21 different states.

For example, the Full Employment Council in Kansas City, MO is collaborating with the Mid-America Regional Council Community Services Corporation and the University of Missouri Curators (on behalf of the University of Missouri-Kansas City Innovations Center KC SourceLink) on a $2 million project to implement training designed to meet the skill requirements of businesses in the advanced manufacturing and information technology sectors. The project also will support taking university and corporate research to commercial application, and support small businesses in taking these applications to market and finding opportunities for growth both domestically and through exports.

Career Pathway Models

Earlier this month, the Departments of Labor, Education, and Health and Human Services released a joint letter highlighting our commitment to promote the use of career pathway approaches as a promising strategy to help youth and adults acquire marketable skills and industry-recognized credentials through better alignment of education, training and employment, and human and social services among public

agencies, and through better linking those services with employer needs. Career pathway models link education and training for specific occupational sectors, such as manufacturing, to help individuals of varying skill levels earn credentials valued by employers, enter rewarding careers in in-demand and emerging industries and occupations, and advance to increasingly higher levels of education and employment.

Through the Department's Employment and Training Administration's Career Pathways initiative, nine states including Minnesota, New Mexico, and Virginia and two tribal entities have established cross-agency teams that include local workforce boards, Temporary Assistance for Needy Families (TANF) providers, adult basic education providers, community colleges, career and technical education providers, and employers.

Subsidized Youth Employment

The Department also partners with HHS to better align TANF funds in support of subsidized youth employment. Most recently, an evaluation report entitled *Using TANF Funds to Support Subsidized Youth Employment: The 2010 Summer Youth Employment Initiative* was published and posted on both Departments' websites signaling the culmination of both Departments' continued collaboration to evaluate Workforce Investment Act (WIA) and TANF coordination and the potential benefits and challenges of the TANF-funded summer youth employment initiative. Funded through an Interagency Agreement between the Departments, this study followed up on the 2010 joint DOL–HHS letter that encouraged states to use TANF funds for subsidized youth employment and for workforce and human service agencies to co-enroll youth in WIA and TANF programs. During January-December 2010, 1,600 low-income youth found subsidized jobs as a result of this partnership.

Informing and Guiding the Workforce System

Credential Attainment

As we invest in skills development, we will not only help individuals return to work, but we also will help workers obtain the measurable and specific skills needed to move along career pathways, while giving employers access to the skilled workers they need to compete globally.

The Department plays a vital role in increasing access to industry-recognized credentials, in partnership with community colleges, businesses and labor unions. This year, the Department set a high priority performance goal to increase credential attainment by 10 percent among customers of the public workforce system by September 30, 2013, and we emphasized occupational training that leads to an industry-recognized credential or certificate.

We also work collaboratively with community colleges, vocational technical schools, and state workforce agencies through discretionary grants and technical assistance efforts to identify and broadly disseminate best practices. For example, best practices such as Integrated Basic Education and Skills Training (I–BEST) have shaped our grant competitions, including the current round of the Trade Adjustment Assistance Community College and Career Training grants. I–BEST in Washington State helps adults who have to balance family and work responsibilities with learning by offering the means to acquire "stackable" credentials along career paths that may result in more or different job responsibilities and associated pay increases. This program also highlights the need to coordinate with partners including employers in order to achieve success.

Manufacturing Competency Model

As part of our focus on skills and competencies attainment, the Department released an updated advanced manufacturing competency model, based on collaborations with industry partners, such as the National Association of Manufacturers/ Manufacturing Institute (NAM/MI), the National Council for Advanced Manufacturing and the Society of Manufacturing Engineers. This employer-validated model outlines the skills necessary to pursue a successful career in the manufacturing industry and includes the recognition of sustainable and environmentally friendly advancements that are now an important part of the advanced manufacturing skill set. The model also allows workers in advanced manufacturing fields the ability to advance their training in a way that is consistent with industry demands. This is one of several competency models that the Department has released.

Electronic Tools

To support the goal of increased credential attainment, the Department has also augmented information on industry-recognized credentials in its suite of online electronic tools that are geared to helping jobseekers explore career options, search for new opportunities and find information on high growth occupations. In mid-Decem-

ber 2011, certifications and credentials that have been endorsed or recognized by third-party industry associations, including the stackable manufacturing credentials endorsed by NAM/Manufacturing Institute, were added to the employment web portals of two such tools: *mySkills myFuture* and *My Next Move.*

Engaging Community Colleges

New Community College to Career Proposal

The Department is working diligently to engage community and technical colleges to bolster skills training among jobseekers. A few weeks ago, Secretary Hilda L. Solis and Dr. Jill Biden announced the $8 billion Community College to Career Initiative that would allow for partnerships between community colleges and businesses to spread more broadly and help employers satisfy their skill needs. Co-administered by the Department of Labor and the Department of Education, this Fund will train two million workers for good-paying jobs in high-growth and high-demand industries, such as health care, transportation, and advanced manufacturing. These investments will give more community colleges the resources they need to become community career centers where people learn crucial skills that local businesses are looking for right now.

Trade Adjustment Assistance Community College and Career Training Grants

Through the TAACCCT grants, the Department has invested $500 million to assist community colleges and other eligible institutions of higher education to expand and improve their ability to deliver education and career training programs; and a competition is currently open for an additional $500 million in TAACCCT grants. In coordination with the Department of Education, these competitive grants are geared towards developing education and career training programs targeted to trade impacted and other workers that can be completed in two years or less and that prepare participants for employment in high-wage, high-skill occupations. With a focus on programs that have strong employer partners and meet industry needs, these grants will improve the capacity of higher education institutions to develop, upgrade, and offer programs that result in skills and credentials that are relevant to high-skill industries, such as manufacturing. And the program's emphasis on producing open educational resources means materials produced through this funding can be leveraged by colleges across the country, not just those that received funding.

One such grantee, the NorthWest Arkansas Community College, leads a consortium of all 22 two-year colleges in the state. Each partner school in the consortium carried out extensive outreach to businesses and other organizations in their communities, and conducted research and gathered labor market data to identify growing industries and occupations. Based on this input, the colleges identified advanced manufacturing and healthcare as the primary target industries across the state, and each school is working to restructure two career pathways, which are comprised of stackable, linked certificates and degrees.

With an almost $15 million grant, these colleges are working collaboratively to transform and accelerate developmental education, streamline and restructure 104 certificate programs and 42 associate degree programs, and enhance the technology and systems that support their students. The colleges also are transforming their student advising systems in ways that will avoid unnecessary credit accumulation and improve the job placement assistance that students receive. This project anticipates accelerating program completions by 15 percent by reducing both the time it takes and the number of credits required for community college students in Arkansas to complete certificate and degree programs.

Another TAACCCT grant is helping the Florence-Darlington Technical College lead a consortium of 10 public two-year technical colleges in South Carolina to improve their ability to deliver programs leading to high-demand industry-recognized certificates and degrees. Through this project, the consortium is addressing several capacity constraints by developing 37 new online contextual learning courses and enhancing its existing online offerings in manufacturing, industrial maintenance, and transportation and logistics.

Customizing Training to Meet Worker and Business Needs

By promoting tailored training strategies to simultaneously meet the needs of workers and meet employer needs for skilled workers, the workforce system plays a valuable role in developing training programs and helping workers retain or obtain good jobs upon completion of these programs.

Business and Industry Partnerships for Earn and Learn Models

In the manufacturing industry, employers have utilized Registered Apprenticeship for decades to train apprentices in traditional manufacturing and other occupations.

In the past decade, as the manufacturing industry has advanced with new technologies, the Department has worked with industry partners, particularly the National Institute of Metalworking Skills (NIMS), to develop competency-based Registered Apprenticeship training models that establish unified skill standards throughout the industry. NIMS has established standards for several occupations, including machinist, press set up operator, electronic discharge machine operator, tool and die maker, precision assembler, and computer numeric controlled operator. At of the end of Fiscal Year 2011 (October 31, 2011), the Department was responsible for overseeing about 14,450 active apprentices in over 2,800 active manufacturing programs (NAICS 31–33), of which 96 were registered during that fiscal year.

Registered Apprenticeship is an 'earn while you learn' model that provides employment and a combination of on-the-job learning with a mentor, related technical and theoretical instruction, and wage increases as apprentices progress. The model offers an efficient, flexible training strategy, responsive to new technology to keep workers up-to-date on skills they need to meet the needs of high-growth industries. In Fiscal Year 2011, Registered Apprenticeship programs served 403,700 participants.

H–1B Technical Skills Training Grants

The Department also has invested $342 million in competitive grants to provide training, job placement, and other assistance in the occupations and industries for which employers are using H–1B visas to hire temporary, high-skilled foreign workers. Manufacturing is among the top 10 industries for which H–1B visas are granted. Our long-term goal is to decrease the need for H–1B visas by helping American workers develop the high level skills needed by these employers. The Department will continue to use the H–1B grants to help individuals upgrade skills for high-growth industries and occupations. The grant program helps workers upgrade their skills while assisting businesses to retain and improve the skills of their workers, expanding their workforce as they successfully compete and prosper in the global economy.

Under an H–1B Technical Skills Training grant for approximately $2.2 million, NIMS is helping 425 unemployed individuals in southern California, greater Chicago, and Alabama get back to work as Computer Numerical Control machine operators—a skilled occupation with a promising career path in precision manufacturing. NIMS is working with manufacturing companies to conduct structured on-the-job training. This training will meet the competencies required by the NIMS National Skills Standards, and participants who complete will earn five nationally-portable industry-recognized credentials.

Another example, the Junior College District of Metropolitan Kansas City, MO recently received an H–1B Technical Skills Training grant for $5 million to implement innovative on-the-job training programs in the information technology sector. The program builds on traditional on-the-job training models to offer training for participants who, without it, might not qualify for information technology positions. Programs like this one help to bridge that gap by helping dislocated workers update their skill sets while working. At the same time, employers are able to offset some of their training costs, allowing them to hire new workers sooner than initially planned and giving them more confidence to hire individuals who might have a steeper initial learning curve.

Closing

In conclusion, we believe our myriad efforts support our shared goal of helping more Americans gain the skills to find good jobs in the 21st century economy and to spur growth in critical industry sectors, such as the manufacturing industry. We again thank this subcommittee for holding a hearing on an important topic, and we would happy to provide additional information and assistance as needed.

Senator KLOBUCHAR. Thank you very much.

Ms. Kanter.

STATEMENT OF HON. MARTHA KANTER, UNDER SECRETARY, U.S. DEPARTMENT OF EDUCATION

Ms. KANTER. Madam Chairwoman Klobuchar, Ranking Member Blunt, and Senator Warner, thank you for having me here to testify this morning. I'm going to talk about the Department of Education's vision for community colleges in training the American workforce for the jobs of today and tomorrow—we're thinking

ahead—and also the underpinning of keeping education affordable in order to do this.

From the beginning of the administration, the President and the Secretary have emphasized how crucial education is to build a competitive workforce. And that's why we have set a bold goal for our Nation: by 2020, to have the highest proportion of college graduates in the world. Community colleges are a big part of that effort to not only meet that goal of 2020, but also preserving the pathway to the middle class for millions of Americans.

We often talk about community colleges as one type of institution. But that really fails to capture that they are designed to meet the many needs of our Nation's communities and vary in structure, in mission, and in offerings. And most every community college across the country works closely with local business leaders to help prepare millions of students for jobs in their various regions.

For recently displaced workers, a community college is the place to acquire new skills to help them reenter the workforce. Part of our trade adjustment work with the Department of Labor is designed to do just that.

For others, community colleges are the place to acquire job certifications, credentials, and technical skills to embark on a successful career or upgrade their skills to advance in the careers they have or even change careers. Still others choose a community college as the local affordable springboard to a four-year baccalaureate degree, while some enter a community college to begin the basic skills and get an entry-level job.

So they have various needs, and community colleges really address the wide range of students coming in their doors. But they face tremendous capacity challenges, which is why those grants were so important as a start.

I served as president and then chancellor of a large community college district for 16 years. And it was gut-wrenching in tough economic times when state funding declined to decide which programs to reduce while enrollments escalated. Our waiting lists were horrendous, because we couldn't afford the technology to better automate our schedules until we ran a local bond election to upgrade our information system. Nor could we afford the computer numerical controls programming and machining lab that Jane Oates mentioned until Haas Automation, Incorporated, stepped in to outfit the lab with the equipment that we needed. The same was true for Energy Management and many other training programs that we offered.

Our state couldn't fund the upgrades we needed for our science labs. So, again, we had to turn to the local community, ran a bond—helped us expand capacity, worked with philanthropies and others just to make ends meet.

So recognizing the critical importance of community colleges and the real challenges that they face across the country, our administration has made some significant investments to help keep these institutions accessible and affordable for students and also pursue the kind of innovation that you're hearing about from my colleagues so that we can have the competitive workforce that we need for the 21st century.

The first and foremost investment we have made is in the Pell Grant program. I want to thank you all. It's really having great returns. It's helping low income students access higher education.

Second, we're working closely, as you heard from Jane Oates, with the Department of Labor on the Trade Adjustment Assistance and Community College Career Training Act Program to provide $2 billion—we're in the second year—to help establish or modernize training programs to help students prepare for the occupations you all mentioned. Our plans are to build on these investments, expand capacity for community colleges, get students off the waiting list, as I mentioned, and really deliver the programs that employers need so we don't have those statistics that Mr. Kilmer mentioned.

If we can work to keep college affordable on the one hand and help build capacity between high schools, community colleges, and universities, we'll leverage innovation, increase productivity, and realize the promise of a well-educated workforce. That's why our budget for next year, Fiscal Year 2013, proposes to establish the Community College to Career Fund that Jane Oates mentioned. We'd be administering this together. It's an $8 billion fund to support employer partnerships with education to get that high-skilled national workforce that we're going to need and create, specifically, pathways for entrepreneurship for small business owners.

We'll train 2 million workers with that fund, leading to skilled jobs in high-demand industries that you mentioned, like advanced manufacturing or healthcare, biotechnology, IT, and also promote promising training strategies to allow students to earn post-secondary credit, the industry-recognized credentials that you mentioned in their selected area of studies, and get ready to be hired by employers or upgrade from where they already are.

As a former chancellor of a very large community college, I know how important a fund like this would have been to my work. I spent many years—well, 10 years on the Workforce Investment Board, but many years building a nursing workforce with 19 hospitals that we served in Silicon Valley. And we had to run an annual lottery every year and turn away hundreds of students, literally, for those jobs because we couldn't expand.

So we did reach out to the local community. They actually funded our nursing simulation lab. They funded our skills lab. They provided philanthropy for scholarships. But without more support, we won't be able to do this going forward, and community colleges are having those kinds of struggles that I mentioned.

Our budget is going to make continued critical investments in student aid to keep college affordable, preserving the maximum Pell Grant award so low income students, as I mentioned, can afford to count on that support in a community college coming from high school, coming from the communities that we serve. We are also proposing $150 million investment in doubling work-study over a five-year period, work-study that the data are clear, students are retained, they persist in college, they are ready for jobs. It gives them relevant employment experience, internships, earn while you learn kinds of things to better prepare them for the workforce. I think Northeastern University is a great example.

So in closing, let me underscore that a college education is no longer a luxury. It's an economic necessity. We want to build capacity, ensure students that come to two- and four-year institutions get in the door. We can shrink the time to degree by accelerating high school to college, the dual enrollment that you mentioned.

I want to thank you for having me this morning. I am happy to answer any questions.

[The prepared statement of Ms. Kanter follows:]

PREPARED STATEMENT OF HON. MARTHA KANTER, UNDER SECRETARY, U.S. DEPARTMENT OF EDUCATION

Madam Chairwoman, Ranking Member Blunt, and Members of the Committee:

Thank you for inviting me to testify today on the Department of Education's work as it relates to community colleges and educating our Nation's youth and adults to ensure our Nation's competitiveness. Our work in this area is critical to creating an America that is built to last.

The President stated in his Fiscal Year 2013 budget remarks on February 13, 2012 at Northern Virginia Community College that community colleges are examples of what is best about this country. As he stated, there is a promise that the knowledge, skills and training that a person can acquire at a community college will enable students to achieve the American promise: the promise that if you work hard, you can do well enough to raise a family, own a home, send your kids to college, and save for retirement.

We believe that an affordable, high-quality college education is fundamental to America's future: to our economic and social prosperity and security. President Obama established a bold goal for our Nation to have the highest proportion of college graduates in the world by 2020. The President, the Secretary, and I deeply believe that achieving this goal, by providing Americans with the opportunity to access and complete high-quality post-secondary education is vital if our Nation is to prosper in a global economy that is predicated on knowledge and innovation.

Dr. Jill Biden, who teaches at a community college, is also one of community colleges' biggest champions. She calls community colleges "America's best-kept secret." The Obama Administration's vision means that community colleges will no longer be a best-kept secret—we envision community colleges assuming a larger role to fulfill the American promise by educating and training our Nation's workers, its youth, and all those who are seeking employment for the jobs of the future.

Background on Community Colleges

There are 1,167 community colleges in this country.[1] But that doesn't mean there is one single model for all community colleges to follow. Rather, they are flexible institutions with several core missions to serve various constituencies in a range of general education, career-technical education and basic-skills programs. For some, community colleges are the first step along a path that leads to a bachelor's degree at a university; for others they are a place to get a certificate or associate degree in a technical field. Or they may be a place to get just a few additional courses that will help a worker keep his or her skills current and in demand. But regardless of each student's goal, community colleges are charged with building the economic and civic pipeline in their local communities and regions.

Community colleges are the on-ramps to postsecondary education for diverse groups of students seeking education and training. Nearly half of our Nation's students enroll in a community college for a variety of reasons: to acquire job skills, either to stay current with the workforce or to obtain the basic requisite skills needed to succeed in a career; to attain an associate degree, certificate, or industry-recognized credential, or to complete the first years of a longer degree program at an affordable cost. A recent report from our National Center for Education Statistics says that community colleges have larger percentages of nontraditional, low-income, first-generation and minority students than our Nation's four-year colleges and universities.[2] Community colleges educate half of all Hispanic and Native American students and nearly half of all students who are African American or Asian/Pacific Is-

[1] *http://www.aacc.nche.edu/ABOUTCC/Pages/default.aspx*
[2] *http://nces.ed.gov/programs/coe/analysis/2008-index.asp*

landers.[3] Community colleges are also a major source of education for nontraditional students, such as women re-entering the workforce, displaced workers, and thousands of returning veterans. Today, the average age of a community college student is 28.5 years,[4] and 59 percent of the community college student body attends community-college full-time while working part-time.[5]

Importance of Higher Education

Now I would like to provide you with some significant data on community college and university graduates that underscore why our Administration is adamant about the need to continue our investment in higher education. First, the evidence on the importance of higher education is unequivocal—individuals with postsecondary credentials earn more money and are much less likely to be unemployed than individuals with only a high school diploma or less. Not only do those with two-and four-year degrees earn substantially higher salaries than those without any postsecondary degree, but they are much less likely to experience unemployment. The proportion of jobs that require some postsecondary education is estimated to increase from 59 percent to 63 percent in the next decade.[6] To remain competitive in today's global economy, the United States needs more workers with postsecondary skills and credentials.

We know that the challenge before us is great. Estimates from Georgetown University's Center on Education and the Workforce show that we are projected to produce 3 million fewer college graduates than will be needed by our economy within the next decade—a gap that could make it much harder for American employers to fill high-skill positions. Worse yet, this gap will hamper innovation that could open up new industries and sources of future jobs.

But if we act now, we can address the gap between employer needs for, and the availability of, postsecondary-educated workers. According to the Center, by adding an additional 20 million postsecondary-educated workers over the next 15 years, our national level of educational attainment would be comparable to the best-educated nations, help us meet the economy's need for innovation, and reverse the growth of income inequality.

That is why this Administration has worked with Congress and taken a number of steps over the last three years to: 1) help support and expand capacity at community colleges to ensure our economic competitiveness; and 2) address the challenge of helping to keep college affordable and accessible.

To build capacity at community colleges, the Administration has:

- Invested $2 billion over four years through the Trade Adjustment Assistance Community College and Career Training (TAACCCT) Grant Program. This historic investment already awarded $500 million last year to help community colleges dramatically expand their capacity and support enhanced partnerships between community colleges, industry, and local Workforce Investment Boards to design and offer programs that provide career pathways for individuals in high wage, high skill industries These programs prepare students for jobs in science, technology, engineering, and mathematics (STEM) fields such as transportation and advanced manufacturing. And resources produced will be open source, allowing even those schools that don't receive funding to take advantage of cutting-edge materials that are developed. While the TAACCCT program is administered by the Department of Labor (DOL), the Department of Education works in partnership with DOL to leverage our technical expertise and existing resources to increase the number of individuals with degrees, industry recognized credentials and certificates. The competition for the second round of $500 million in the TAACCCT initiative is underway right now.
- Supported and participated in the launch of Skills for America's Future, an industry-led initiative to enhance employer partnerships with community colleges This program will build a national network and maximize industry-driven workforce and economic development strategies to strengthen community college career-technical programs and increase the placements of job-seeking Americans into in-demand jobs.
- Convened the first-ever Community College Summit at the White House in October 2010, bringing together an unprecedented number of higher education, industry, research, military and workforce and economic development leaders, to discuss and identify solutions to everyday challenges facing community colleges.

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[3] *http://www.aacc.nche.edu/AboutCC/Pages/fastfacts.aspx*
[4] *http://nces.ed.gov/programs/coe/analysis/tables/2008-tabsa09.asp*
[5] *http://www.aacc.nche.edu/AboutCC/Pages/fastfacts.aspx*
[6] *http://www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/FullReport.pdf*

Building on this historic convening, the Department of Education led five regional Summits to further engage local community college boards, faculty, administrators, students, businesses, community partners, and other stakeholders in helping students reach their academic and career goals.

- Launched a series of peer-led webinars to deliver professional development and technical assistance to large community college audiences. The Department of Education's 2012 community college webinar series offers webinars on topics such as strengthening employer partnerships, academic alignment between high schools and community colleges, building career pathway programs that help bridge the needs of adult learners and improving developmental education—all to help these institutions build capacity by modernizing their courses, building more robust partnerships with industry and deploying evidence-based strategies to increase community college retention, persistence, graduation and employment numbers and rates.
- Issued a joint letter, along with the Departments of Labor and Health and Human Services, affirming the mutual commitment of these agencies to career pathways approaches, generally referred to as *a series of connected education and training strategies and support services that enable individuals to secure industry relevant certification and obtain employment within an occupational area and to advance to higher levels of future education and employment in that area.* This letter also encourages State and local governments, and their partners, to coordinate resources to ensure a streamlined service delivery system across various funding sources in the development of career pathway strategies that result in employment. We believe that the efforts of these three Federal agencies working together toward a common goal is a powerful signal. It will encourage collaboration at the State and local levels to increase opportunity and employment and to advance our Nation's economic competitiveness.
- Proposed to strengthen the education and career and technical skills pipeline for in-demand occupations in high-growth industries. The to-be-released Blueprint will be the Administration's foundation for the $1.1 billion proposal for the reauthorization of the Carl D. Perkins Career and Technical Education Act of 2006. The Blueprint sets forth a vision to transform career and technical education. It will strengthen connections among high schools, community colleges and universities by ensuring that career pathways and postsecondary programs are closely aligned with labor-market needs to increase the number of college graduates with postsecondary degrees and certificates as well as industry certifications, that meet the workforce needs of our Nation.

Lastly, the President's Fiscal Year 2013 Budget builds on historic investments in community colleges by proposing a new initiative designed to improve access to education and job training nationwide. Through the Community College to Career Fund (Fund), the Budget would provide $8 billion, administered jointly by the Departments of Education and Labor, to support State and community college partnerships with businesses to build a high-skilled national workforce and create pathways to entrepreneurship for 100,000 small business owners. In total, this investment would train 2 million workers with skills that lead to good jobs in high-demand industries that require highly-trained workers, including manufacturing, healthcare, IT and biotechnology.

The Fund would be an economic development strategy that serves the dual purpose of ensuring that community colleges have the necessary resources to train workers, and that employers in growth industries have the skilled workforce they need for positions that might otherwise go unfilled be outsourced overseas.

In addition to supporting community college-based training programs that provide workers with targeted training for jobs in growing industries, the Fund would also support on-the-job training opportunities, such as registered apprenticeships and paid student internships, allowing students to earn postsecondary credit for work-based learning. The fund will also support promising "Pay-for-Performance" strategies for training providers that include community colleges, community-based organizations and local workforce organizations to help Americans secure long-term employment after attaining their postsecondary education, training and credentials.

Finally, the Fund would also recognize that improving career training requires us to also address larger issues beyond institutions by supporting regional or national industry group efforts to develop solutions such as worker certification standards, wide-scale adoption of proven training technologies, and industry-education collaboration to strengthen career pathways. The Fund will enable Federal agencies to partner effectively with State and local governments, to accelerate the education and training of individuals. With this Fund, companies would be motivated to locate

or stay in the U.S., where they will have ready access to a well-trained workforce who possess the knowledge, skills and work ethic required by employers.

In the area of college affordability and accessibility, the Administration:

- Invested more than $40 billion in Federal Pell Grants over the past 3 years, extending Pell grants to 3 million more college students this year than in 2008 and raising the maximum Federal Pell Grant award to an estimated $5,635 for the 2013—2014 award year—a $905 increase per Federal Pell Grant since 2008. As you know, most of that investment was paid for by increasing efficiency in our student loan program.
- Working to make college loans more affordable through the "Pay as You Earn" proposal, which would enable an additional 1.6 million students to take advantage of a new option to cap student loan payments at 10 percent of a borrower's monthly income starting as early as this year.
- Proposed to make the American Opportunity Tax Credit permanent, to provide a credit of up to $10,000 for up to four years of education. Over nine million middle class and low-income families claimed the credit last year.

These historic investments in student aid has kept the net tuition and fees paid by families—the tuition and feeds they paid after grant aid—essentially flat over the last few years at approximately 80 percent of our Nation's postsecondary institutions. Because of the Administration's Federal investments, the net price of a four-year college education at one of our public postsecondary institutions has increased by just $170 since the 2006–07 academic year. Significantly, the average net tuition and fees paid to attend a community college has actually decreased by $840 over the same period.[7]

But we know that the Federal Government cannot single-handedly ensure worker competitiveness and college affordability, access, and success. The Administration, Congress, postsecondary institutions, states, industry and other stakeholders must all work together to build on the momentum of recent years to make sure that more Americans will have access to the nation's growing employment opportunities through workforce education and training offered at community colleges, and that a college education is affordable and available to all who want the opportunity.

As the President has said, "in today's global economy, a college education is no longer just a luxury for some, but rather an economic imperative for all." The Federal Government, states, and colleges and universities must all work together to promote college access and affordability by reining in college costs, providing value for American families, and ensuring that America's students and workers can obtain and complete the education and training they need, when and where they need it. America must have a workforce prepared for the jobs of the 21st century and a society that will strengthen and preserve our democracy for our generation and generations to come. Our Administration stands ready to work with Members of this Committee on legislation to implement the President's proposals. We also look forward to working with states, colleges, and other stakeholders on this important agenda.

I am ready to answer any questions you might have. Thank you.

Senator KLOBUCHAR. Thank you very much. We're going to start with Senator Blunt.

Senator BLUNT. Thank you, Chairman.

Ms. Kanter, on the—what was the—the 2020 goal you mentioned was to have the highest percentage of——

Ms. KANTER. College graduates.

Senator BLUNT.—college graduates.

Ms. KANTER. In the world.

Senator BLUNT. Would that also include like an associate's degree from a community college?

Ms. KANTER. We're hoping—yes. What we're hoping for is to have 5 million more graduates from the two-year institutions and about 3 million more from the rest of higher education, in addition to the 2 million that would happen doing nothing. I mean, we really need to accelerate the education and training of——

[7] *http://trends.collegeboard.org/downloads/college_pricing/PDF/Trends_in_College_Pricing_2011_Average_Net_Price.pdf*

Senator BLUNT. But in trying to reach that goal, the two-year, the associate degree of some kind——

Ms. KANTER. Yes.

Senator BLUNT.—would accommodate the goal.

Ms. KANTER. Half of the goal.

Senator BLUNT. And where are we now, related to the other countries in the world? If we're going to be the highest——

Ms. KANTER. Right now, we're 16th in the world. A generation ago, we were first in the world. So we've lost our share. We're tied for 16th with three other countries.

Senator BLUNT. So this goes to move us 16 places in 8 years?

Ms. KANTER. Yes.

Senator BLUNT. I hope we can do it. That would be——

Ms. KANTER. It's a very ambitious goal, but we've got states like Indiana and Florida and—there are lots of states across the country that have set that goal. Some go to 2025. Some go to 2020. We think we just need to accelerate. We need more students getting the kinds of credentials and degrees that my colleagues have described.

Senator BLUNT. From the point of view of your earlier work as the chancellor at a community college, do you have any idea how the proposal that we begin to penalize loans and grants if tuition goes up too much—how much that will —how that would impact community colleges? You know, the President in the State of the Union said we were going to begin to condition loans and grants based on tuition increases. I really don't know what that means, particularly as it might relate to community colleges where a 10 percent increase may be a whole lot less money than a 2 percent increase at a state or private institution down the street.

Ms. KANTER. Right. Well, I mean, the President talked about—and we're planning to look at several parts of this equation for campus-based aid. This is money that Congress has allocated to the campuses to give out, that goes from States to the campuses. It's called campus-based aid. There are three parts of it. Perkins, work-study are two parts of that, and SEOG, which are supplemental grants for the lowest income students in the Nation. Those are sort of a type of addition that students—when they really need that push.

So the plan is to look at colleges and universities over time that provide good value. So, for example, colleges that have very low graduation rates historically or colleges that aren't serving the full range of students in their communities—colleges that provide good value—we've reached out to the communities to ask colleges and universities—we're having affordability summits around the country to get ideas of how to measure good value.

We want students graduating without huge loans to repay, so repayment rates is a part of it. We produced a score card on the White House website that—we'll be actually sending out a draft of that in a couple of weeks—what it would look like. So good value——

Senator BLUNT. And you think the normal accreditation process doesn't—no longer serves that need of determining which institution should continue to do the work they're doing or not?

Ms. KANTER. Well, I think every process for evaluating the quality of institutions needs change. And we just finished negotiated rulemaking with people from all over the country who are experts in their fields of study in the different sectors of education to come together and provide recommendations to the Secretary. And I can get back to you.

They just published their findings recently on what their opinion is in terms of really improving accreditation, places where accreditation can, for example, look more directly at the quality of learning outcomes from institutions of higher education and what does that really mean, you know. Anyway, that's a long story. But I'd be happy to get you information.

Senator BLUNT. And I'd like to see it.

Put me down, at least right now, on the side that we'll actually mess this process up if we get overly involved in it. I think one of the reasons the United States has been so good since World War II in higher education is the government has found ways to provide assistance in funding and hasn't until right now really gotten much into the job of trying to run these institutions.

And this is just to report back to the home office for you, but I think it's a bad idea for us to, one, begin to think that we're going to do a better job determining whether programs meet the criteria they need to meet. What's a credit hour? I was like you. I spent several years as president of a university, and I think that the accreditation system has worked pretty well.

And I have a lot of concerns, the one I just mentioned being one of the top ones, that if we really do begin to evaluate tuition increases and things like that with some number that we think for a moment can equally apply to everybody—because it would particularly be penalizing in the environment you're so familiar with.

Ms. KANTER. Yes.

Senator BLUNT. I'm going to come back. We'll maybe have a second round of questions.

So, Chairman, thank you.

Senator KLOBUCHAR. Very good.

Senator Ayotte.

STATEMENT OF HON. KELLY AYOTTE,
U.S. SENATOR FROM NEW HAMPSHIRE

Senator AYOTTE. Thank you very much, Madam Chair.

I thank the witnesses for being here today. I appreciate your testimony. This is certainly an important issue.

Secretary Oates, you and I had a chance to talk on the phone last spring about a very important project in New Hampshire, the Manchester Job Corps Center. And when we talked about it, the project had been stalled because of protests that were issued in it because of a project labor agreement requirement for this very important Federal project in New Hampshire, which we would hope would put probably about 300 to 400 people to work to build it and then, obviously, provide very important training opportunities for individuals in New Hampshire that are able to get their high school education and also get very valuable training.

In fact, New Hampshire was really one of only two states in the Nation that is without a Job Corps training center. I wanted to fol-

low up, because as I understand it, when I spoke with you last spring, I expressed the concerns of our associated builders and contractors in New Hampshire over the project—the President's Executive Order requiring project labor agreements—particularly because our New Hampshire contractors felt that most of them were non-union and felt that they would not be able to meet the requirements of a project labor agreement.

So here we are 2 years later, and the project went out for bid, and there were, as I understand it, three bids on it. All of them were from outside of New Hampshire. In fact, our contractors—again, the requirement—I asked you not to include the project labor agreement requirement in it again. The Department went forward, included the project labor agreement requirement in it, and now here we are again with bid protests. And the bids that you have before you are three out of state contractors.

The New Hampshire contractors, I can tell you, having spoken to them, feel denied an opportunity to actually build this important Federal project in our own state, because, you know, they're basically non-union shops. So I guess I would ask you, at the end of the day—I've looked at the studies on this project labor agreement. The studies show that costs increase between 12 and 15 percent when you include a requirement of a project labor agreement.

In my state, it leads to the absurd result that out of state contractors are the only ones that are bidding on this really important New Hampshire Federal project in our state. So somebody from Florida may build our project—our Job Corps here in New Hampshire.

So this whole hearing is about competitiveness. Can you help me—why was the project labor agreement—why does that add to our competitiveness? Because I view it as the opposite. Why wouldn't the President—if it costs 12 to 15 percent more to build a Federal project that has a project labor agreement in it, why would we keep this requirement when it seems to impede good contractors like we have in New Hampshire from building Federal projects in their own state?

So can you help me with this? I'm really struggling with it. And I feel like the contractors in New Hampshire who do things efficiently and very well are being denied an opportunity here to bid because they are non-union shops, and I think it's wrong.

Ms. OATES. Senator, first, I'll start with where we agree. We are both committed to building a Job Corps in Manchester, New Hampshire. I would ask you to understand that there is an Executive Order, and our agency followed the Executive Order. And it was the finding of both political—because I sit on the Board—as well as career people that a project labor agreement was the best way to proceed in New Hampshire.

The bottom line here——

Senator AYOTTE. I'm sorry to interrupt. But just to clarify, the project labor agreement—you were required to have that because of the Executive Order. Isn't that correct?

Ms. OATES. No, ma'am, no, not——

Senator AYOTTE. So you could have proceeded without the project labor agreement?

Ms. OATES. That's correct. If the evidence had indicated that we should not use a project labor agreement, that's the way we would have gone. Now, I do want——

Senator AYOTTE. What type of evidence, though? Can you help me with this?

Ms. OATES. I can certainly show you the process that we went through. The project labor agreements that we've studied actually come in on or below budget and on time. And I just want to stop—as much as I know that this gets in the spin—a project labor agreement does not require organized labor. In fact, as you mentioned, one of the successful bids is a Florida construction company, not a state known for a lot of organized labor.

The problem that you're describing—this is a $40 billion—a $40 million project, not billion—$40 million project, and the bonding is what impacts a lot of construction companies. They can't bond for that high a number. And we are certain if the New Hampshire site follows work that was done in other states, that even though the contractor is from out of state, there will be work for New Hampshire workers.

And, of course, at the end of the day, all the non-construction jobs, the teaching jobs, the resident assistance jobs, all the vocational jobs, will go to New Hampshire individuals. Again, I hope you appreciate that while the President—any President puts in an Executive Order in our department, it's our responsibility to follow that Executive Order.

And I'll end where I began. Senator, we are both equally committed. I hope you noticed that in our budget request, we put in that we would have not only for New Hampshire but also for Wyoming a Job Corps in every state, no matter what else I have to do.

So while we'll agree to disagree on the project labor agreement, we'll continue—it is in protest right now at GAO. I can't give a lot more details about that right now, because I wouldn't want to impact that protest and slow things down further. We will proceed with Manchester as soon—and we have not slowed down anything. As soon as GAO makes their determination, we will proceed in whatever way we have to proceed.

Senator AYOTTE. Well, Secretary Oates, I really appreciate your commitment to going forward with the Manchester Job Corps. We do share that commitment, because I think it's very important that New Hampshire have the Job Corps.

But where we disagree—I mean, I've got before me a number of studies that show that it's a 12 to 15 percent increase in cost. And I've got from our builders and contractors—and I've spoken to them personally about this—that if the PLA was not on this, we wouldn't have—these protests would be unlikely.

This thing could have already been done, and, frankly, more people would have been given the opportunity to bid on it. So you and I disagree on the project labor agreement. I think it's an unnecessary Federal burden placed on people who want to do good Federal work and do it at the lowest cost possible, really maximizing the taxpayer dollar.

So I still haven't heard why—why is it necessary, how does it make us more competitive to have a project labor agreement? I

guess I don't understand that. Can you tell me why we're more competitive by having these?

Senator KLOBUCHAR. Ms. Oates, if you could, make your answer brief and then if Senator Ayotte wants to continue in the second round, we can go on.

Ms. OATES. OK, Senator.

Senator AYOTTE. Thank you.

Ms. OATES. I don't understand the competitive nature. These jobs are going to get done one way or another. And, obviously, we have conflicting studies. I have studies that show that the jobs come in on time and on or under budget. And I don't disagree with you, Senator, that you have other studies that say the opposite. I'll just—and, again, we're committed to this, and we're going to make sure that Manchester happens no matter what.

Senator AYOTTE. Well, I appreciate it.

Thank you very much, Madam Chair. And I just want to save taxpayer dollars.

Thank you.

Senator KLOBUCHAR. Thank you.

I'm going to step back a little bit to talk about some of the issues that affect every single state, and that is how we're going to get a manufacturing workforce again. We have people retiring, so that is a major issue. And then we also, as I mentioned, have actual job openings, especially in states that are moving ahead in high-tech manufacturing areas, like Minnesota with medical device and other things.

So one of the things that I've heard from some of our superintendents, particularly in the rural suburban areas, is just that they have trouble getting not just the kids—it's the parents—to see that this is a good occupation and a way to go again. And I don't blame these parents. They're thinking about what happened in the past when factories shut down. They're thinking of other kinds of manufacturing jobs.

Yet for many of these kids, they're either not graduating from high school, they're going to college maybe for a year and then they stop—maybe they can't afford it—or they just quit. And then—or they get a 4-year degree for which they don't have a job.

So just a quick answer here on how you think we get at that issue. Anyone? Practically.

Ms. KANTER. I mean, I just visited Garden City Community College and Des Moines Area Community College. I'll just identify Accumold as a company that's expanding in Des Moines. What they're doing is identifying promising high school students, making the community college students an Accumold scholar, giving the kind of industry internship while the students are in school, and giving them employment, and they are having tremendous success—those high employment rates in advanced manufacturing. They're expanding the plant. But it's about, I think, as Roger told me before the hearing, relationships.

Senator KLOBUCHAR. Exactly, and I agree. I think that's a good answer. I've seen in some of our high schools where, like, Mayo doctors adopt a school from elementary on. Seagate was out at Shakopee High School, and, actually, these kids had made automatic pool ball rackers, which was this incredible thing with sen-

sors—high school kids. And I asked them who they thought would get this product, and they said people who have everything. But it was just an incredible scene of what was going on. So I think that industry pairing is important.

Quick, quick on one point—and then I want to move on—that we are working very hard on the Stafford loans. As you know, Ms. Kanter, the interest rates are set to double to 6.8 percent in July unless Congress acts. What do you think would be the effect of that when kids are already having trouble affording school?

Ms. KANTER. Yes. It's going to make it harder for students to feel that college is affordable. So we're hoping that Congress will act to approve the—extend the current interest rate to keep college affordable.

Senator KLOBUCHAR. One of the things around our state—and maybe the other two witnesses here can answer—is that we've seen, you know, industries that have certain job openings, and it seems to work best when they have a community college. I'll use the example of Digi-Key. Arctic Cat makes snowmobiles and ATVs, and then Digi-Key is an incredible company, and they are in the town of Thief River Falls, Minnesota. You may not have heard of it.

These companies are employing thousands of people. Yet they have a community college, Northland Community College, that's right there. And they're able to go to them and say, "Hey, we need 30 employees in a management program," or "We need more technicians in this area." And my view is that that works when you're in a town—a sort of mid-sized town that can do that. Some of the smaller towns—more difficult, and then also the metro areas, where you have kids in inner-city schools that really don't know what's available out there in terms of manufacturing.

Talk to me about how we can better match—we're doing a mapping in our state. The Governor has ordered it—match the industry, what they need, with the community college and the four-year degree systems.

Ms. OATES. Well, one of the things that we're doing is mandating that you have employer partners in everything that you do and making things end in this industry-recognized credential. It's amazing to me that prior to 2009, as smart as previous administrations were, they put money out the door and didn't demand that the training and education end in an industry-recognized credential.

But I think that's only the beginning. I think the partnerships that you're hearing about here with both Roger and Martha—we can't just talk to our own people. I can't talk to the workforce without talking to the community college and without talking to businesses. We we're trying to leverage that, so we're all talking to each other's audience as well as our own audience. We have a real—you know, everywhere I go, I hear about jobs and demand and people unemployed. And until we, you know, improve that alignment, we're not going to get the job numbers that we want.

Senator KLOBUCHAR. So do you think that national certifications or industry standards are a solution to aligning workers with these jobs? Or is it just, you know, more bureaucracy?

Ms. OATES. No. I think it's the answer. And I can tell you that there's not a week that goes past that I'm not sitting with employers, and they're telling me what they want people trained in. And areas where we haven't seen this mismatch are areas where states license. So we don't hear this in healthcare. We hear about shortages, but not a skills misalignment. Instead, we hear it in IT and in manufacturing, where the industry has grown, and the educational and training partners haven't been attuned to what the industry needs are.

So we have to force that from the Federal and State level so that we don't keep training people who end up at the end of training saying there's no job at the end. And I think we've begun to do that, but it's really important that we always begin with the business. If we don't talk to businesses first, we're going to sell our workforce short.

Senator KLOBUCHAR. Very good. Thank you.

Senator Blunt.

Senator BLUNT. Thank you, Chairman.

Ms. Oates, I would think one of our big challenges would be training people for jobs that will still be the jobs by the time we get them trained. I know 15 years ago, you'd walk through a machine shop, and there would be all this talk about how we're not bringing the machinists on. Nobody's going to know how to do this. There's still some need for that skill set, and it turned out to be pretty transferable.

But I was in some defense subcontractors, mostly in rural Missouri, in the last couple of weeks. And, of course, none of that machine work—or, at least, most of that machine work is not done the way it used to be done. It's computer skills, math skills, setting up the equipment in the right way.

How do we keep up with—what do we do that allows us to prepare people for the job skills that they're likely to need and that we can't quite anticipate what those are?

Ms. OATES. I'll tell you, Senator, it's really complicated, because we still have a need for old occupations like welding. When I came into this job, Governor Barbour from Mississippi was one of the first phone calls I got. And he said, "How come we have all these foreign welders, and I can't get Mississippians"—I mean, I dragged myself down to Mississippi, and he was right. Everybody had stopped training welders except Rochester, Minnesota. You know what I mean?

So we have to stay true to some of those other things, but we have to get ready for advanced manufacturing and IT and things like that. And I stole the idea from the last administration. In the last administration, my predecessor at ETA started building something called a Core Competency Model, just like a pyramid.

There are courses on the bottom leg of that pyramid that are going to be the core foundational courses for a number of jobs. And then as you get up to the top of the pyramid, that's where you're going to see customization and specialization.

So they did a—since we've been here, we've done advanced manufacturing. We've done medical records. And we've done—we've continued to work with the good work that they did in the previous administration with energy, because energy is changing, you know.

And it's amazing to me that we have to keep this idea of those foundational courses so that employers see that people have the basics, and we can customize on the job site for them, but also so that employees, when they're dislocated, don't think the first 40 years of their work life was for naught. So I think that's the technology—you know, manpower technology that we're going to use, staying with these Core Competency Models.

Senator BLUNT. Right. And you mentioned that with proper training, we can fill the current gap where we think we need more H–1B visas. Between now and the time we fill that gap, are you all looking—either you or Education—at making the H–1B visa number work better?

Ms. OATES. Well, we actually take your lead. You establish a cap, and you make certain occupations above or outside the cap.

Senator BLUNT. Right.

Ms. OATES. So any faculty members that come in to Martha's institutions that she oversees are not in the cap. That's all outside the cap. So for us—I mean, look, there are some occupations that are going to take a long time. We can't help people become engineers in less than four years.

Senator BLUNT. Right.

Ms. OATES. No matter what kind of skills. But there are things that we can do getting ready for that. So you don't need a four-year degree to be a web page designer, and yet in 2010, we brought in hundreds of people on H–1B visas who were designing web pages. So we're working together to make sure people understand that with 1 year of technical training or a two-year degree, you can compete as a web page designer.

We know we're always going to need international talent. You know, I'm not James Monroe, you know. I don't want to keep everybody else out. But we need to have the right mix, and we need to do a better job of explaining to young people that we all care about, but also to dislocated workers, that they could get the skills through higher education. At least 1 year, maybe more, of higher education will give them the competitive edge they need to get that job.

Senator BLUNT. Just for the record, I don't think James Monroe wanted to keep everybody else out, either. Maybe Millard Fillmore, but not James Monroe.

[Laughter].

Senator BLUNT. Mr. Kilmer, the single best strategy that you've found to get people interested in participating in your program?

Mr. KILMER. For us, it's really about getting manufacturers to start thinking more strategically about where they're taking the company and what they need. I mean, we've obviously got some very short-term needs. And so that's why when we're looking at this initial tool development, for example, we're really focused on the recruitment piece of this. How do you find those positions—or how do you find the people to fill those positions right now?

But a company has got to start thinking a little bit more strategically about where they're going to be, what their needs are going to be, so that, one, they better understand and can fill those requirements, they can do the internal training of their existing staff, and then I can also be feeding these kinds of requirements to these

other programs in the community colleges to do a better job of aligning both what the future needs are and the kind of programs they've got to support that.

Senator BLUNT. Thank you, Chairman. I may have some other questions for the record to submit later, but that's all I have for this panel.

Senator KLOBUCHAR. Very good.

Well, I want to thank all of you. It has been very helpful, and I'm glad that you're very focused on these needs out there and coordinating. I think that was one of Senator Warner's points at the beginning—because I think we have huge potential here to make more things in America, and we need to have the workers that are there to do it. I know we have people that want work right now, and so we need to match them with those skills and those jobs.

So thank you, and we'll call up our second panel.

Before I introduce our second panel, I'd like to have the written testimony from Chancellor Steven Rosenstone of the Minnesota State Colleges and Universities submitted to the record.

The information referred to follows:]

PREPARED STATEMENT OF STEVEN J. ROSENSTONE, CHANCELLOR, MINNESOTA STATE COLLEGES AND UNIVERSITIES

Chairwoman Klobuchar and members of the Competitiveness, Innovation, and Export Promotion Subcommittee, thank you for the opportunity to submit written testimony on Promoting American Competitiveness: Filling Jobs Today and Training Workers for Tomorrow. As the largest higher education system in Minnesota, the Minnesota State Colleges and Universities (MnSCU) system is committed to providing the workforce that is the engine of Minnesota's prosperity by producing the graduates who are crucial to the success of businesses and industries across the state.

In my testimony, I will first provide an overview of the MnSCU system, then address the challenges facing Minnesota that impact our ability to fuel the state's prosperity, and finally discuss actions we are taking to address those challenges.

The Minnesota State Colleges and Universities is a tremendous state resource made up of 31 colleges and universities, with 54 campuses, providing access to higher education for learners across the State of Minnesota for more than 150 years. Our campuses have a broad and deep impact on regional economies, citizens and businesses. We serve 420,000 students who come to us as new high school graduates, as adult learners, or as workers and professionals retooling to meet the current and future needs of Minnesota's businesses.

We are the system of access and opportunity, educating 60 percent of Minnesota's undergraduates, with 88 percent of our students from Minnesota. Eighty-five percent of our graduates get jobs related to their field of study, and 80 percent stay in Minnesota to work or continue their education and contribute to Minnesota's quality of life.

Each year, we deliver 49 percent of new teaching graduates in the state, 83 percent of new nursing graduates, 84 percent of new construction trades workers, 85 percent of new law enforcement graduates, 90 percent of new mechanics and 9,000 fire fighters and first responders.

The colleges and universities confer more than 40,000 degrees, certificates and diplomas each year, preparing Minnesota's workforce with the skills required by business and industry. We prepare our students to be good citizens and future leaders. In addition to providing certificate and degree programs, we deliver 6,000 customized training programs to businesses across Minnesota, to ensure that 120,000 workers each year are up-to-date on the latest technologies needed for Minnesota to remain productive and competitive.

To be successful in this role, we must continually redesign how we do business, how we work together to reduce costs and increase the effectiveness of our operations. Over the past decade, demand has soared with enrollment up 15 percent. Over this same period, we have worked prudently to manage our operating costs and increase productivity and have had some success. Faculty productivity has im-

proved 12 percent; and compared to similar systems throughout the country, MnSCU's administrative spending per student ranks 37th out of 50.

We are the state's most affordable higher education option. We cannot meet the state's workforce needs or ensure access to higher education unless we can reduce the financial barriers to college.

So what are the challenges? The bottom line is we are facing a significant future workforce shortage. First, Minnesota has an immediate and growing skills gap that is holding back job creation and our economy. There are many good jobs available, but there is a shortage of people with the education to do those jobs. I hear from companies across Minnesota about a dire need for workers with advanced skills, particularly in the manufacturing, bio-tech and health care sectors. The painful reality is that many of the 167,000 Minnesotans without jobs do not have the education needed for the new economy.

Second, we are facing a significant shortage of workers with the education needed for the jobs of the future. By 2018, 70 percent of all jobs in Minnesota will require some postsecondary education; and 85 percent of the new jobs created between now and 2018 will require some postsecondary education with over half of those jobs requiring a certificate or associate degree, not a baccalaureate degree.

Put differently, in this century, Minnesota's most precious resource is not its land, mines, rivers, or timber, but our people. To compete in the global, knowledge economy, Minnesota's workforce needs higher levels of education than ever before. We need a more robust pipeline of increasingly skilled workers, innovative and creative thinkers who solve problems, are on the leading edge of knowledge creation, and can bring those solutions to market. Minnesota's workforce must also meet the needs of global customer service, production, assembly, delivery and distribution systems. If we don't provide the workforce that firms need to be globally competitive, our businesses and factories will move to where they can find those workers.

Succinctly put, if we fail to meet our state's evolving workforce needs, Minnesota will be in great jeopardy.

Third, K–12 preparation is not where it needs to be to meet the future workforce needs of Minnesota. About one-fourth of Minnesota students entering high school don't graduate on time; one-half of students of color who enter high school don't graduate on time; and too many of all those who do graduate are not college-ready.

Minnesota now has the third largest achievement gap in the Nation. This means that our state's fastest growing populations—people from communities of color and families of modest financial means—are the least prepared for the jobs that lie ahead. We must close the achievement gap. Minnesota business needs a diverse workforce to compete in the global economy. And going forward, there will be virtually no jobs that will provide a decent standard of living to those who don't complete some postsecondary education. Failing to close this gap will condemn those left behind to a life of poverty. We simply cannot allow this to happen. We must ensure that all high school students are college ready so they can acquire the skills needed for the work that needs to be done in Minnesota.

Fourth, the State of Minnesota has disinvested in higher education. State funding of higher education has declined with Minnesota's investment per student in higher education dropping faster than the national average. Between Fiscal Year 1999 and Fiscal Year 2010, Minnesota's support of higher education fell 40 percent in constant dollars, compared to a 19 percent decrease for the Nation as a whole. Over the past two years, only nine states in the country decreased higher education spending more than in Minnesota. Minnesota's cuts to higher education were five times deeper than the national average. Minnesota's support of higher education is no longer above average at a time when above average is no longer good enough.

The impact of all this on students has been profound. The stark reality is that state funding per student in Minnesota State Colleges and Universities—in constant dollars—has been cut 46 percent since 2000. Withdrawal of state support has pushed more of the financial responsibility onto students and that trend cannot continue if we are going to meet Minnesota's workforce needs. The cost—in constant dollars—of educating a student in MnSCU is actually 10 percent lower than it was a decade ago; it's who pays the cost that has shifted from the state to the students.

We are facing a perfect storm. At a time when more and more people need higher levels of education than ever before, to be prepared for the jobs that will enable businesses across Minnesota to compete in the global economy, we have slashed our investment in higher education. Education was Minnesota's comparative advantage in the last century. It must continue to be our comparative advantage in this century, but we are in great danger of not being prepared.

How can we meet these challenges? The Minnesota State Colleges and Universities are playing a lead role in delivering solutions. We are working together with the Minnesota Department of Employment and Economic Development; the Min-

nesota Chamber of Commerce and local chambers; the Minnesota Governor's Workforce Development Council; Greater Twin Cities United Way; Governor Mark Dayton; and the Minnesota Legislature; workforce centers; faculty and staff; foundations, businesses, industries, and labor across our state to forge a plan. Key to the plan is working together in new ways. Let me share with you some of the steps I think we need to take together.

A Four-Part Strategy

Part 1: We need to map the workforce needs of Minnesota going forward, sector by sector, region by region. We need to move from many anecdotes to a systematic assessment and precise projections of the need for skilled workers. To that end, MnSCU is leading a "Workforce Assessment" initiative to address the state's growing skills gap. The Workforce Assessment initiative will engage employers in developing precise projections for how many workers and professionals, with what kinds of skills, for what kinds of jobs.

This spring, we are coordinating more than 40 listening sessions with Minnesota employers throughout the state to gain a better understanding of their current and future workforce needs. The data gathered from the sessions will be used by MnSCU colleges and universities to align their certificates and degrees, worker retraining and customized training programs with the needs of Minnesota's businesses, industries and communities. The initial listening sessions focus on specific occupation groups in six industry sectors: Healthcare, Information Technology, Manufacturing, Engineering, Energy and Transportation. Sessions in the agriculture sector are planned for this summer, and sessions for additional sectors, including financial services, insurance, mining and forestry will be held this fall.

At each listening session, employers are being asked to discuss a series of questions focused on key occupations in their industry, including the following:

> Workforce Supply/Demand: What are your current and future hiring challenges? Where do most of your workers come from today? What does the future of your workforce look like—what types of jobs will you need to fill? What is your timeframe for filling these positions? What is your estimate for how many positions you may need to fill?
>
> Workforce Skills: What qualities/skills are you currently looking for (or will be looking for in the future) but not finding in your workers? What skills/abilities would you like to see in individuals entering the workforce that you are not seeing today? What changes or trends will affect your industry over the next 2–5 years? What are the implications of these trends for your workforce requirements? What skills or credentials (*e.g.,* technical skills, "soft" skills, leadership skills, languages, etc.) do you expect to be looking for in the next two years?
>
> By listening to Minnesota employers, we can obtain a greater, much more nuanced understanding of the state's workforce needs. Armed with the data obtained from the listening sessions, we can ensure that higher education is delivering the right academic programs and preparing graduates with the skills necessary for the success of Minnesota's businesses and communities. By doing so, we will help more Minnesotans find fulfilling careers while at the same time helping to secure the state's economic prosperity.
>
> The Workforce Assessment initiative is underway with seven sessions having already been convened and many more scheduled in the upcoming weeks. Already we have heard of the need for students to have greater exposure to hands-on problem solving and real-world business scenarios, stronger math and computer science skills, and a willingness to learn new technologies. Employers speak of the need for "business critical soft skills" in time management, conflict resolution and adaptability. In Information Technology, for example, employers said the days of "banging out code" are over, and that graduates need to have the ability to work in complex systems and communicate with customers who are tech savvy, but not experts.

Part 2: We need to make sure that our conversations with business and industry are ongoing, so that we can ensure that our college and university programs are aligned with Minnesota's workforce needs going forward. We need to ensure that we have the right programs, in the right places, to prepare the right kind of graduates—with the skills they need to work in and lead every sector of Minnesota. This includes not only aligning our certificate and degree programs, but our advanced certification programs, our programs aimed at retooling workers, and our customized training programs that meet the needs of business.

Part 3: Higher education must do an even better job preparing graduates. Our good programs must become excellent, and our excellent programs must become pre-

eminent. MnSCU faculty members from across the entire state are leading discussions about how we can do more to ensure that students realize their full potential and that every one of our programs is preparing graduates who are ready for the workplace of the future. We must do a better job of helping students complete their certificate and degree programs in a more timely fashion. We must continue to identify ways to increase the effectiveness and efficiency of our operations so that tuition can remain affordable. And finally, we must focus on outcomes—the capabilities of our graduates, not the test scores of our freshmen—as the measure of success.

Part 4: We need to ensure that there is a pipeline of high school graduates who are college ready and heading to programs that will fill the jobs that will enable Minnesota to soar. We are partnering with the Minnesota Department of Education and with schools across Minnesota to ensure that students from all walks of life—young and old, rich and poor, black and white, immigrants and fourth generation Minnesotans—are all college-ready.

We must close the achievement gap, and we are partners in statewide initiatives to do just that. We must get more students to graduate high school proficient in reading, math and science, and ensure that we understand the capacities and passions of every student so we can point them to the right postsecondary program that will lead to them filling critical, well-paying jobs and happy, productive lives. We must take what we have learned from our workforce needs assessment into the high schools so that we can get the jobs of the future and the skills needed to do those jobs on the radar screens of young people so they can chart smart courses.

We must be willing to redesign grades 11–14 to do just that. Students should have the option of starting college courses when they are ready and not have to wait until they complete grade 12. Not everyone needs or wants to pursue a four-year degree. Let's connect students with an interest in technical careers with programs in technical colleges that are aligned with the jobs of the future. Let's make it easier, more cost-effective, more flexible, and more efficient.

These are huge challenges and I take them on with tremendous enthusiasm and a keen sense of responsibility.

Minnesota State Colleges and Universities play an essential role in growing Minnesota's economy and opening the doors of educational opportunity to all Minnesotans. We are committed to:

1. Ensuring access to an extraordinary education for all Minnesotans. Our faculty and staff will provide the best education available in Minnesota, preparing graduates to lead in every sector of Minnesota's economy. We will continue to be the place of opportunity, making education accessible to all Minnesotans who seek a college, technical or university education; those who want to update their skills; and those who need to prepare for new careers.
2. Being the partner of choice to meet Minnesota's workforce and community needs. Our colleges and universities will be the partner of choice for businesses and communities across Minnesota to help them solve real-world problems and keep Minnesotans at the leading edge of their professions. Our faculty and staff will enable Minnesota to meet its need for a substantially better educated workforce by increasing the number of Minnesotans who complete certificates, diplomas and degrees.
3. Delivering to students, employers, communities and taxpayers the best value/most affordable option. Our colleges and universities will deliver the highest value to students, employers, communities and taxpayers; and we will be the highest value, most affordable higher education option.

To meet our commitments to the people of Minnesota will require courage to do what's needed when it's needed, creativity to make the impossible possible, and collaboration by working together in new ways.

The ultimate goal that we are committed to is nothing less than the economic vitality of our state and the quality of life of its people. This is the project I signed up for when I accepted the position of Chancellor of Minnesota State Colleges and Universities. This is the project I look forward to working with you on over the years ahead.

Thank you.

Senator KLOBUCHAR. Our second panel is made up of industry and educational leaders who have a crucial role in keeping our workforce competitive, as well as attracting talent and setting industry standards for American workers. So I was kind of thinking in my head when one of our witnesses in the previous panel said

we always have to start with business—well, we have a habit in the Senate of starting with the government, and now we are turning to business and those that work with business. Maybe it should have been reversed, but we have traditions here. And I want to thank you all for coming.

First of all, I want to introduce Mr. Bob Kill. He's the CEO, as I mentioned before, of Enterprise Minnesota, a non-profit business organization connected to the National Network of Manufacturing Extension Partnership Organizations. What he basically does is help small and medium-sized manufacturing companies work with education services and government to help them find skilled workers to compete and grow.

He also has a mentor program set up. During the worst of the downturn, he was out there helping his small businesses to find people that would give them advice on how to handle the downturn. And he has done an incredible job, so I'm very honored to have him here.

Our next witness will be introduced by Senator Blunt, because he happens to be from Missouri.

Senator BLUNT. Well, Chairman, I'm always glad to have Missouri witnesses, and I'm always glad to get to introduce them. So thanks for letting me do that.

I want to introduce the President and CEO of Exergonix. This is Don Nissanka. He's on the cutting edge with his company of designs for energy storage, for really a wide range of applications. Don has started other companies and done very well with that. He's a self-made success story. His current company and the companies he has started in the past employ hundreds of people in our State and around the country.

He works really closely with the University of Central Missouri, where he graduated, to train workers and to be sure they have the skills they need for high-tech manufacturing. And I thank you for including him on the panel today.

Senator KLOBUCHAR. Thank you very much, Senator Blunt.

Next we have Dr. Lee Lambert. He is the President of Shoreline Community College in Shoreline, Washington. He came to the college in January 2005. He is recognized nationally as a champion for innovation and change in U.S. higher education and is a leading advocate for the advancement of 21st century technologies, international education, and global affairs.

Thank you, Dr. Lambert.

Next we have Ms. Monica Pfarr. She is the Corporate Director of the American Welding Society Foundation. By the way, all the time, when I go to events, they say there's openings in welding. So now I know where to direct them.

She has been appointed to spearhead the American Welding Society initiatives, consulting with and building strategy for local welders, businesses, and other organizations with needs in welding.

Thank you.

And next and last we have Ms. Jennifer McNelly. She is the President of the Manufacturing Institute, which is the non-partisan affiliate of the National Association of Manufacturers. We are pleased to have the president of NAM out in Minnesota, and we went and he saw firsthand—went to visit some of the companies

where we actually have a lot of openings and heard about the issues we have. And we've truly appreciated working with NAM on the bill that I have with Senator Brown as well as one we're working on with businesses.

So thank you.

She is one of the chief architects of one of the Institute's flagship reform efforts, the NAM-endorsed Manufacturing Skills Certification System.

That's why I saw you nodding your head when I asked about certifications.

She has focused on workforce development for the industry.

So thank you very much.

We will begin with Mr. Kill.

STATEMENT OF ROBERT H. KILL, PRESIDENT AND CEO, ENTERPRISE MINNESOTA

Mr. KILL. Madam Chair, Ranking Member Blunt, and members of the Committee, thank you for the opportunity to testify. My name is Bob Kill. I'm the President and CEO of Enterprise Minnesota, and we are the Minnesota affiliate of the Manufacturing Extension Partnership, the acronym MEP.

We operate as a stand-alone, non-profit, consulting organization that focuses on medium and small manufacturers to help them compete and grow profitably. And as the MEP affiliate, we pride ourselves in measuring the business results achieved by our clients to assure their investment and the investment of Federal dollars are used wisely. Additionally, we undertake initiatives to bring visibility to the value of our manufacturing sector, including our annual State of Manufacturing Survey.

In our state, there are almost 8,000 manufacturers. Manufacturers provide almost 15 percent of our jobs and 18 percent of the wages. Manufacturing jobs in Minnesota pay an average weekly wage of $1,120, which is a 22 percent multiple over the average weekly wage across all industries.

Yet with those statistics, in the fourth quarter of 2011, there were over 4,900 unfilled jobs in our manufacturing sector, almost 10 percent of all job vacancies. This means that there is $5.5 million in average weekly wages that aren't being paid due to vacant positions. And that number will continue to grow, based on the results of our survey.

The State of Manufacturing Survey is our annual poll of 400 manufacturing executives, and we supplement the poll with 20 focus groups. And in the poll, the concern over attracting qualified workers has more than doubled in the past year, with 31 percent of manufacturing executives saying it's a concern, up from 14 percent in 2011. The 200 participants in the focus groups further magnify this challenge, and the challenge is at all levels within manufacturing, the entry level, two-year technical, and also four-year degrees.

Rapidly changing technology presents an additional hurdle and widens the gap between the sector's existing workers and the skills that are needed in today's manufacturing. In our state, we've tried to close that gap with a program called the Growth Acceleration Program, acronym GAP, a program funded by our state that helps

small manufacturers accelerate business improvements to create jobs.

GAP funding helps businesses buy down the cost of our services by providing up to $1 of State money for every $3 a company invests. To date, this program has helped 192 manufacturing companies create or retain over 1,700 jobs. Because we are an MEP center, and we measure the results, it has shown a realization of almost a 30-to-1 return spent on GAP.

Of course, the other way to close the skills gap is to increase the talent pool and, I think, strategically, is our long-range challenge. The Chancellor of Minnesota State Colleges and Universities, Steven Rosenstone, says that 85 percent of all new jobs created between today and 2018 will require post-secondary education. But less than half of them require a baccalaureate degree. Chancellor Rosenstone, new to his position, has dedicated schools to finding the right path for each student based on their passions and interests.

It is essential to attract more young people to manufacturing by making them and their parents aware of the great opportunities that exist and to create the true image of today's advanced manufacturing. Building these public-private collaborations between communities and schools and manufacturers is vital to closing the skills gap.

At two colleges in Minnesota is the Right Skills Now program that I think will be talked about a little bit later. An important part of our role as an MEP center is to make sure that manufacturers do their part by speaking their minds and opening their doors to young people, parents, and the public sector to show this firsthand career opportunity.

And they are doing their part. Over the past four years, Enterprise Minnesota has arranged and facilitated close to 300 tours by elected officials and their staff. The power of the Federal Government can be used to expose the teachers and students and parents to these careers that exist. This increasing visibility on a national basis is integral to the future of manufacturing.

Thank you for the opportunity to testify today. Manufacturing is back in the positive spotlight, and we all look forward to being a part of attracting the new workforce.

[The prepared statement of Mr. Kill follows:]

PREPARED STATEMENT OF ROBERT H. KILL, PRESIDENT AND CEO, ENTERPRISE MINNESOTA

Chairman Klobuchar, Ranking Member Blunt and members of the Committee, thank you for the opportunity to testify on behalf of Enterprise Minnesota at this Subcommittee on Competitiveness, Innovation & Export Promotion hearing on *"Promoting American Competitiveness: Filling Jobs Today and Training Workers for Tomorrow."*

My name is Bob Kill, and I am the President and CEO of Enterprise Minnesota. We are the Minnesota affiliate of the Manufacturing Extension Partnership (MEP).

Enterprise Minnesota is a standalone non-profit business consulting organization that helps medium-sized and small manufacturers in Minnesota to compete and grow profitably. As an MEP center, we pride ourselves in measuring the business results achieved by our clients to assure their investment and Federal dollars are used wisely. To further our mission we are committed to bringing together the public and private stakeholders to further the success of manufacturing in our state. We also undertake initiatives to bring visibility to the value of Minnesota's manu-

facturing sector, including the annual *State of Manufacturing*® survey, now in its fourth year.

Manufacturing is vital to our communities and state. According to our Department of Employment and Economic Development (DEED):

- There are nearly 8,000 manufacturers in the state of Minnesota.
- Manufacturing provides almost 15 percent of Minnesota's private sector jobs and 18 percent of the wages.
- Each manufacturing job supports 1–2 additional careers in the state through supplier purchases and employee spending.
- Manufacturing jobs in Minnesota pay an average weekly wage of $1,120, which is a 22 percent multiple over the average weekly wage of $915 across all industries.

In the fourth quarter of 2011, there were 4,925 unfilled jobs in Minnesota's manufacturing sector, accounting for 9.8 percent of all job vacancies in the state. This means that there is a collective $5.5 million in average weekly wages that could be paid to manufacturing workers, that isn't being paid due to vacant positions in the industry. That number of career vacancies continues to grow based on the results of our *State of Manufacturing*® survey. This gap will widen as more workers retire. As a sector, manufacturing has among the state's oldest employees.

The State of Manufacturing® is our annual poll of 400 manufacturing executives from a cross-section of Minnesota companies and locations. The goal is to get an accurate assessment of the state of the Minnesota manufacturing sector from the perspective of the industry's decision-makers. We also supplement the poll with a series of focus groups held across the state. In the poll, we found that concern over attracting qualified workers has more than doubled in the past year, with 31 percent of manufacturing executives saying it is a concern for their firm, up from 14 percent in 2011. Nearly 6 out of 10 (58 percent) manufacturing executives also say it is a challenge to attract qualified workers to their companies. This is a noticeable increase from 2011, when 45 percent reported difficulty in attracting qualified workers. Additionally, the 200 manufacturers that participated in the 20 focus groups magnified this challenge. We used the term qualified rather than skilled workers as we find that the challenge is at entry level, two year technical, with and without experience and also four year degree positions.

The survey also revealed that growing companies exacerbate the issue. In looking to the past 12 months, 27 percent of executives in the *State of Manufacturing*® survey reported adding to their workforce. Over the next 12 months, larger companies, especially, anticipate continued growth. Forty-six percent of executives at firms with $5 million or more in annual revenues and 44 percent of executives at firms with more than 50 employees expect their workforce to grow over the next year.

Rapidly changing technology presents another hurdle and widens the gap between the sector's existing workers and the skills that are needed in today's highly automated precision manufacturing environments. In Minnesota, we've tried to close that gap through the Growth Acceleration Program (GAP)—an effort funded by our state that helps small manufacturers accelerate business improvements to grow and create jobs. GAP funding helps businesses buy down the cost of business services that we provide at Enterprise Minnesota by providing up to $1 of state money for every $3 a company invests, up to $50,000 per year. To date, GAP has helped 192 manufacturing companies across Minnesota create or retain over 1,700 jobs. Participating companies have realized a $30+ return for every $1 spent on GAP, and some companies have experienced a 40-to-1 return on investment.

Of course, the other way to close the skills gap is to increase the talent pool. Chancellor of Minnesota State Colleges and Universities (MNSCU) Steven Rosenstone says that 70 percent of all careers in 2018 will require some post-secondary education; 85 percent of all new jobs/careers created between today and 2018 will require post-secondary education, with less than half of them requiring a baccalaureate degree. Chancellor Rosenstone has dedicated his schools to finding the right path for each student based on a deeper understanding of their passions, interests and skills, as the kind of work that needs to be done in Minnesota.

It is essential to attract more young people to manufacturing by making them and their parents aware of the great opportunities that exist in manufacturing, and to create a better image of what manufacturing can offer as a career. Building public-private collaboration between communities, schools and businesses is key to closing the skills gap. An important part of our role as an MEP center is the make sure that manufacturers do their part by showing up, speaking their minds and opening their doors to young people, parents, and the public sector to show firsthand the career opportunities. And I can assure you, they are doing their part. There are far

too many examples to go into here but over the past four years we have arranged and facilitated over 200 tours by elected officials.

The input of the Federal Government is not just legislative, but also to use the bully pulpit to expose teachers, students, and their parents to the exceptional careers that exist in manufacturing companies. Increasing the visibility of these great careers from a national basis is integral to the success of our businesses and our local, state and national economy, and we firmly believe that these public/private collaborations are the way to build that visibility efficiently and effectively.

Thank you for the opportunity to testify today. Manufacturing is back in the "positive spotlight" and I look forward to being a part of attracting our new workforce to the great careers available.

Senator KLOBUCHAR. Thank you very much, Mr. Kill.

Mr. Nissanka.

STATEMENT OF DON NISSANKA, PRESIDENT AND CEO, EXERGONIX, INC.

Mr. NISSANKA. Madam Chairwoman, Senator Blunt, thank you very much for giving me the opportunity to talk today. My name is Don Nissanka. I'm President and CEO of Exergonix in Lee's Summit, Missouri.

Exergonix designs and manufactures innovative, lithium-based, energy storage systems for a wide range of applications, for military, telecommunications, and to support the great storage requirements. We produce these systems in sizes small enough for individual cell tower support in homes, as well as large enough storage systems to support the utility industry and electrical energy storage.

Our systems provide the missing link that makes renewable energy cost effective and will allow nations around the world to implement a worldwide, workable, smart and decentralized utility grid.

I came to the U.S. about 25 years ago. I received an excellent education from one of the outstanding universities in Missouri, the University of Central Missouri, which provided me a continuing series of jobs and training. Nearly a decade ago, I decided I wanted to go out on my own. I built a company and created new technology jobs in this country. I watched U.S. companies shut down plants and move their businesses overseas because they said they just merely wanted to be competitive. I felt strongly that this was the wrong approach, and I decided I needed to make a difference.

From that time, my main focus has been to develop high technology companies that create good, high-paying jobs in the United States. My competitive edge was technology, automation, and specialty skills training. We were successful in doing this with my first company, now called Dow-Kokam, which today employs over 100 people in Missouri and Michigan and which will soon hire several hundred more skilled workers to staff our new highly automated manufacturing plant in Midland, Michigan.

But, as you know, it is becoming difficult in many parts of the country to find enough well-trained workers with the skills needed for today's advanced technology manufacturing. Across the United States, there is a shortage of engineers, scientists, and skilled manufacturing workers needed to build the types of products that my company produces.

What is important to note, when we move manufacturing jobs overseas, what we have forgotten, unfortunately, is that we take away the innovation that goes with each job. For example, a person building a product on a manufacturing line also improves that product on a daily basis. They find better processes to manufacture, develop new complementing technologies that help businesses grow, and they learn skills as a specialist in what they do.

Technology advancement requires incubation of ideas and exposure to basic principles at a grass-roots level early enough to keep the creativity flowing. Today, our younger generation of workers are not getting the exposure and the background that is necessary for innovation early enough to keep that creativity going. And, unfortunately, it's hurting us because of it.

The U.S. was a technology leader in the 1980s, which is one of the reasons I came to this country as a young man. I feel strongly that we have to change the way we educate, train, and employ our future leaders so they can be more competitive in the development of new ideas.

When I started Exergonix in 2010, I wanted to take a further step toward addressing this need in training and skills for workers by creating a business-university partnership which would allow students to develop skills leading them directly to a job upon them graduating. Working closely with my good friend, Dr. Charles Ambrose, the President of my alma mater, the University of Central Missouri, we developed the concept for the Missouri Innovation Campus.

The Missouri Innovation Campus is a collaboration between business, education, and community leaders to give our students the focused science, math, and technology training combined with hands-on experience that will lead to jobs upon graduation. And those trained students will ensure that our advanced technology companies in the community will not have to go elsewhere to find trained workers needed for successful growth of our companies.

To implement our plan, last year, Exergonix acquired 85 acres of land in Lee's Summit. We will locate our headquarters and manufacturing facility onto this site, and we are working to bring other companies that are in the renewable energy sector to become partners with us. Already we have an LED lighting manufacturing company committed to be located there.

UCM will occupy 150,000 square feet of facility on the site, and we have companies in the area becoming partners in the initiative, including companies like Honeywell, ProEnergy, Sprint, Cerner, and Smith Electric Vehicles, committing to hire these graduates. Students will be able to go straight from classes to their apprenticeship, and as part of this become involved in the work we are doing.

I thank you for the opportunity to speak today. I just wanted to share some of my ideas.

[The prepared statement of Mr. Nissanka follows:]

PREPARED STATEMENT OF DON NISSANKA, PRESIDENT AND CEO, EXERGONIX, INC.

Chairwoman Klobuchar, Senator Blunt, and members of the Subcommittee: thank you for the opportunity to appear before you today. My name is Don Nissanka, President and CEO of Exergonix in Lee's Summit, Missouri. Exergonix designs and

manufactures innovative lithium ion based energy storage systems for a wide range of applications from military to telecommunications to grid storage. We produce these systems in sizes small enough for individual cell towers or homes all the way to units large enough to be used by electric utilities. Our systems provide the missing link that make renewable energy systems cost effective and will allow nations around the world to implement a workable, smart and decentralized power grid.

I came to the United States 25 years ago. I received an excellent education from one of the outstanding universities in Missouri, the University of Central Missouri, which provided me with a continuing series of jobs and training throughout my career starting as an intern at Gates Energy in the early 90s. Nearly a decade ago, I decided I wanted to go out on my own, build a company and create new technology jobs in this country. I watched U.S. companies shut down plants and move their businesses overseas because they said they wanted to be more competitive. I felt strongly that this was the wrong approach, and I decided then I needed to make a difference.

From that time, my main focus has been developing high technology companies that create good, high-paying jobs in the United States. My competitive edge was technology, automation and specialty skill training. We were successful in doing that with my first company—now called Dow-Kokam—which today employs more than 100 people in Missouri and Michigan and which will soon hire several hundred more skilled workers to staff its new highly automated plant in Midland, Michigan.

But, as you know, it is becoming difficult in many parts of the country to find enough well-trained workers with the skills needed for today's advanced technology manufacturing. Across the United States, there is a shortage of engineers, scientists and skilled manufacturing workers needed to build the types of products my company produces.

When we move manufacturing jobs overseas, what we have forgotten—unfortunately—is that we take away the innovation that goes with each job. For example, a person who builds a product on a manufacturing line also improves that product on a daily basis: they find better processes to manufacture, develop new complementing technologies that help businesses grow, and they learn skills as a specialist in what they do. Technology advancement requires incubation of ideas and exposure to basic principles at a grass-root level early enough to keep the creativity flowing.

Today, our younger generation of workers is not getting exposed to the backbone of innovation early enough to get that creative juice going—and that hurts us. The U.S. was a technology leader in the 80s, which is one of the reasons I came to this country as a young man. I feel strongly that we have to change the way we educate, train and employ our future leaders so they can be more creative in the development of the next big idea.

When I started Exergonix in 2010, I wanted to take a further step toward addressing this need for well-trained, skilled workers by creating a business-university partnership which would allow students to develop skills leading them directly to a job upon graduation. Working closely with my good friend Dr. Charles Ambrose—President of my alma mater, the University of Central Missouri—we developed the concept for the Missouri Innovation Campus.

The Missouri Innovation Campus is a collaboration between business, educators and community leaders to give our students the focused science, math and technology training combined with hands-on experience which will lead to jobs upon graduation. And those trained students will ensure that our advanced technology companies in the community will not have to go elsewhere to find the trained workers needed to successfully grow our companies.

To implement our plan, last year Exergonix acquired 85 acres of land in Lee's Summit—a suburb of Kansas City about an hour west of the main UCM campus in Warrensburg. We will locate our headquarters and manufacturing facility on this site, and we are working to bring to the site other companies in the renewable energy sector such as electric vehicle assembly, solar panel integration and other cutting-edge, green technologies. Already we have an LED bulb manufacturer committed to locating there, and we are looking at an advanced pneumatic generator company also to locate into the campus. UCM will occupy a 150,000 square foot facility on the site, and we have other companies in the area—including Honeywell, ProEnergy, Sprint, Cerner and Smith Electric Vehicles—committed to hiring graduates. Students will be able to go straight from class to their apprenticeship training at Exergonix or another company on the site.

We are working with the University to rewrite the curriculum so that it fits our employment needs. We will work with the University to help cover student tuition costs—and the result will be students walking out the door with their diplomas and into jobs for which they already trained and qualified, but without the huge debt burden so many graduates today are faced with. As you know, the student tuition

debt has surpassed the credit card debt in the country. Our Innovation Campus idea is a win-win for everyone.

One of the exciting originalities of the Missouri Innovation Campus is that UCM is working with local high schools, community colleges and other universities to include their students in the program. Beginning this fall, high school students will be able to enroll in the technology training program—earning college-level credit and beginning an apprenticeship with a local high-tech company. The result is that these students will be able to move to solid, high-paying jobs in as little as two or three years after finishing high school.

I am gratified that Missouri Governor Jay Nixon is supportive of our project. He recently committed $500,000 to support the project and—more importantly—established a $10 million fund to support similar projects around the state. The partnerships funded under that program will go a long way toward developing the skilled workforce that Missouri needs to continue to grow its manufacturing, aerospace and green energy industries.

This country has given me many opportunities. I want to make sure that my daughter and her classmates have at least the same opportunities I had—both to get a high-quality education and to be able to turn it into a good-paying career. As the CEO of an advanced technology manufacturing company, I believe the Missouri Innovation Campus is exactly the type of program we need to ensure that we meet this goal, and our Nation retains and creates as many jobs as possible.

Attached to my written testimony are a white paper by the University of Central Missouri and a recent article by Governor Nixon on the Missouri Innovation Campus. I ask that these be included in the record.

Thank you. I'd be pleased to answer any questions you may have.

ATTACHMENTS

WHITE PAPER FROM UNIVERSITY OF CENTRAL MISSOURI

A New Vision

Educational institutions exist to create opportunities for individuals to advance their success, invest in their future and give back to their community. So why are so many standing on the outside looking in?

For Missouri to meet Governor Jay Nixon's goal for at least 60 percent of the population to have a college degree by the year 2020, educational institutions must develop innovative solutions to the biggest obstacles facing students today. Among them is an increasingly large debt upon graduation.

Education is critical to the state's economy. An educated workforce attracts new industry, opens new businesses and creates jobs, and it is essential for educational institutions to graduate students who meet the needs of these future employers. In-demand industries are specifically in need of skilled workers with an educational background in science, technology, engineering and health care.

Educational institutions have the tools to equip students for the future. Businesses have the demand for a skilled labor force to grow and expand in the state of Missouri, but until now, an artificial division has separated these areas. The solution? The University of Central Missouri and Exergonix, Inc.,—a new "green" technology company in Lee's Summit—present the Missouri Innovation Campus to serve as a model for the marriage of education and industry.

Missouri Innovation Campus

The Missouri Innovation Campus is a progressive initiative between educational institutions, community organizations and businesses partners to revolutionize the way students learn and work. Joining in this initiative are the University of Central Missouri, Exergonix, Inc., City of Lee's Summit, Lee's Summit R–VII School District, Lee's Summit Chamber of Commerce, Lee's Summit Economic Development Council, Metropolitan Community College-Longview, Cerner Corporation, Honeywell and the state of Missouri.

Together, this partnership will help:

Students

- Gain valuable, engaging experience in the applied sciences
- Lessen the burden of student debt
- Decrease the time it takes to earn a degree

Employers

- Acquire skilled workers with competency in emerging technologies

- Encourage innovations in science, engineering, education and nursing

The mission of the Missouri Innovation Campus is to help bridge the gap between graduates and workforce demands. In addition to building knowledge through their classroom experiences, students will have the opportunity to experience a high-impact, real-world environment where they can develop skills long before they complete their degrees. The Missouri Innovation Campus will also provide an atmosphere for educators to stay current in technology areas such as wind and solar energy, electric vehicles, energy storage, LED lighting and more.

One of the greatest obstacles to growth and innovation is student debt. The innovation campus will seek new ways to assist students through student employment, tuition forgiveness, shared tuition and low-interest loan programs. This will greatly lower their overall cost and reduce the amount of debt they have upon graduation.

The Missouri Innovation Campus will be developed on property in Lee's Summit near Highway 50 and Missouri 291 South.

Invest in Missouri

The estimated economic impact of the Missouri Innovation Campus is significant to the Kansas City metropolitan area in terms of job creation and capital investment in buildings and equipment. Creation of a new model in higher education that is student-centered and meets critical workforce needs is an investment in the future of the state that could not only move Missouri to national prominence but accelerate its ability to compete in a world market.

The Kansas City Star—Posted on Sun, Feb. 26, 2012

MISSOURI INNOVATION CAMPUS WILL SPEED STUDENTS TOWARD DEGREES, JOBS

By Gov. Jay Nixon, Special to The Star

Imagine students being able to complete their bachelor's degrees in under three years—and graduate debt-free.

Imagine schools providing focused study, from middle school through college, which prepares students today for careers of tomorrow.

Imagine a campus where students get academic credit—and real-world training—in state-of-the-art facilities supported by companies on the leading edge of science and technology.

This bold new vision for the future of higher education is taking shape today through the Innovation Campus of the University of Central Missouri. The campus is the result of an unprecedented partnership between the university, Lee's Summit School District, Metropolitan Community College, local businesses, community leaders and the state.

This initiative could not come at a more critical time.

Today's students face a rapidly evolving, technology-driven global economy. Before the end of this decade, the majority of all jobs in the United States will require some kind of higher education.

To compete successfully for the best jobs in the new economy, our children will need higher education and training that is focused, efficient—and affordable. That's especially true in fields like science, engineering, technology and health care, where rapid job growth already exists.

But the current business model for higher education is not keeping pace. The rising cost of higher education is pushing a college degree out of reach for many.

Students who graduate are often saddled with thousands of dollars of debt. That makes it harder for them to purchase cars and homes and keep our economy moving forward.

At the same time, companies in high-growth sectors need a highly skilled workforce to grow, innovate and compete. But here, as in many parts of the nation, the gap between skills needed in the workforce and skills graduates possess impedes growth.

By leveraging public and private resources, the Innovation Campus holds tremendous potential to boost economic development.

Here's how it will work.

Starting this fall, the program will enroll up to 30 high school juniors at Summit Technology Academy, a pre-professional technical school that serves students from 16 area high schools. They'll be prepared to study science and technology at the college level and sharply reduce the time it takes to earn their degrees. With opportunities to take dual-credit courses at Metropolitan Community College, Advanced Placement and other programs, students can earn college credits while still in high school.

Students will also be placed in apprenticeships and on-the-job training programs with local business partners, including Cerner, Exergonix, DST and Sprint. That provides students the opportunity to hone their problem-solving skills in a real-world setting.

My administration is supporting this unprecedented partnership with a $500,000 Community Development Block Grant to fund apprenticeships, training and educational opportunities.

To participate, business partners must commit to creating jobs. Innovation Campus students would be highly trained candidates for these new positions once they've completed their bachelor's degrees and apprenticeship training.

Beginning Thursday, my administration will make an additional $10 million available in competitive grant funds to adapt the Innovation Campus model across Missouri. I encourage private businesses and all Missouri public colleges and universities to look for ways to adapt the lessons across our state.

As governor, I'm committed to making college education more affordable and accessible to more families, to training Missourians for the jobs and careers of tomorrow, and to growing our economy.

The Innovation Campus is a bold idea whose time is now.

Jay Nixon, a Democrat, is governor of Missouri.

Senator KLOBUCHAR. Thank you very much.

Dr. Lambert.

STATEMENT OF LEE LAMBERT, PRESIDENT, SHORELINE COMMUNITY COLLEGE

Dr. LAMBERT. Madam Chair Klobuchar, Ranking Member Blunt, my name is Lee Lambert, President of Shoreline Community College, which is located 10 miles north of downtown Seattle. Thank you for the opportunity to testify.

Community colleges are in a unique position to connect the needs of business and industry with the men and women who come to us for employable skills. Shoreline Community College has been at the forefront of implementing the Manufacturing Skills Certification System endorsed by the National Association of Manufacturers. Today, we are leading the way to implement the Right Skills Now program recently touted by President Obama.

Our campus is also one of two national innovation centers connected to the National Coalition of Certification Centers, or NC3 for short. Our success is built on partnerships. Let me illustrate how we do this.

I'll start with our Professional Automotive Training Center, because it is the blueprint for all of our efforts. The center is one of the premiere automotive technician programs in the United States. That's not our marketing slogan. It is something our partners tell us.

The center is home to General Motors, Chrysler, Honda, and Toyota's new technician training for the area new car dealers. The Puget Sound Auto Dealers Association is co-located on our campus. In addition to the four, other manufacturers, dealers, and suppliers send about 10,000 incumbent workers a year to the center for skills upgrade training. We also created an entry-level General Service Technician program in response to industry needs.

Through the Automotive Youth Educational System, a program of the National Institute of Automotive Service Excellence, we connected with high school students. We also bring high school automotive instructors from across the Pacific Northwest to the center to train on the latest technologies.

Every student in our factory-sponsored program is placed with a local automotive dealer. Students cycle between the college and the work place, immediately practicing what they've just learned. Many graduate with a two-year Applied Associate in Arts and Sciences degree, along with manufacturer-specific training certificates. And these students are getting good jobs, with placement rates of virtually 100 percent.

How did we do all this? We asked each of our partners what we can do for them, not what they can do for us. We are using the same approach with the aerospace industry. Our campus is just 15 miles from Boeing's Everett plant, home of the production lines for the 747, 767, 777, and 787 airplanes.

The aerospace industry is facing serious workforce challenges. So we met with Boeing and some of the 600 or so supplier firms in the state to ask what they need. Our CNC machining program is a NIMS accredited program and trains students to use $100,000 computer numerical control machines the size of a room to produce the precision parts needed to build airplanes.

We listened to industry and responded. Our lead instructor designed a short-term aerospace-specific course. That course is now adopted by 10 other community colleges in the State of Washington to help students get jobs and help industry get trained workers.

These two programs share a number of important traits. Both use industry-based curriculum. In some cases, the curriculum comes directly from industry. Both use third-party assessments. Of course, our students get grades, degrees, and certificates from the college, but they also receive industry-endorsed certifications.

Our GST and CNC programs use I-BEST, or Integrated Basic Education and Skills Training. Washington community colleges invented this nationally recognized program which adds another instructor to the classroom to help students with English language or math. Shoreline is the largest I-BEST program in the State of Washington.

Both use the Career Navigator program. This is a partnership with the Aspen Institute, the Seattle-King County Workforce Development Council, and Pacific Associates. The Career Navigator matches students with employers to ensure both get what they need. The program is getting phenomenal results, with virtually every student finding a family wage job in our region. We found a model that works, putting people in jobs that industry needs filled.

So thank you for your time. I would be happy to answer any questions.

[The prepared statement of Dr. Lambert follows:]

PREPARED STATEMENT OF LEE LAMBERT, PRESIDENT,
SHORELINE COMMUNITY COLLEGE

Madam Chairwoman and members of the Committee, my name is Lee Lambert, President of Shoreline Community College. Thank you for the opportunity to address this topic that is so important to our citizens and their ability to compete in an increasingly globalized economy.

Community colleges are in a unique position to connect the needs of business and industry with the men and women who come to us for employable skills. Shoreline Community College has been at the forefront of implementing the Manufacturing Skills Certification System endorsed by the National Association of Manufacturers. Today, we're leading the way to implement the Right Skills Now program recently

touted by President Obama. Our campus is also one of two national innovation centers connected to National Coalition of Certification Centers.

Our success is built on partnerships. Let me illustrate how we do this:

I'll start with the Professional Automotive Training Center because it is the blueprint for all our efforts. The Center is the premier automotive technician program in the U.S. That's not our marketing slogan; it is something our partners tell us.

The Center addresses the needs of students, the state, auto manufacturers, industry suppliers and auto dealers. We train technicians for dealers selling new GM, Chrysler, Honda and Toyota vehicles. The Puget Sound Auto Dealers Association is on our campus. Other manufacturers and suppliers send about 10,000 incumbent workers a year to the Center for skills-upgrade training.

We also reach out to the K–12 system. Through the national Automotive Youth Educational System, we connect with students in high-school automotive programs. We also bring high-school automotive program instructors from across the Pacific Northwest to the Center every summer to train on the latest technology.

Every student in the factory-sponsored programs is also placed with a local automobile dealer. Students cycle between college and the workplace, immediately practicing what they've just learned. Many graduate with a two-year Applied Associate in Arts and Sciences degree along with manufacturer-specific training certificates.

And these students are getting jobs, good jobs, with a placement rate of virtually 100 percent.

How did we do all this?

We ask each of our partners what we can do for them, not what they can do for us.

We are using the same approach with the aerospace industry.

Our campus is just 15 miles from Boeing's Everett plant, home of the production lines for 747, -67, -77 and -87 airplanes. The aerospace industry is facing serious workforce challenges. So we met with Boeing and some of the 600 or so supplier firms in the state to ask what they need.

Our CNC machining program trains students to use $100,000, computer-controlled machines the size of a room to produce the precision parts needed to build airplanes. We listened to industry and responded. Our lead instructor designed a short-term, aerospace-specific course. That course is now adopted by 10 other colleges to help students get jobs and help industry get trained workers.

These two programs share a number of important traits.

Both use industry-based curriculum. We teach what the industry needs an employee to know. In some cases, the curriculum comes directly from industry.

Both use third-party assessments. Of course, our students get grades, degrees and certificates from the college. But, they also receive industry-endorsed certifications that show they have the knowledge, skills and abilities to do the job.

Both use I–BEST, or Integrated Basic Education and Skills Training. Washington community colleges invented this nationally recognized program which adds another instructor to the classroom to help students with English language or math. Shoreline is the largest I–BEST provider in the state.

Both use the Career Navigator program. This is a partnership with the Aspen Institute, the Seattle-King County Workforce Development Council and Pacific Associates. The career navigator matches students with employers to ensure both get what they need. The program is getting phenomenal results with virtually every student finding a family-wage job in our region.

We've found a model that works, putting people in jobs that industry needs filled. Now we're working to apply in other areas just as fast as we can.

Thank you for your time.

SUPPLEMENT—BACKGROUND FOR TESTIMONY REFERENCES

NAM-endorsed Manufacturing Skills Certification System

- Overview
  - Companies continue to report they cannot find individuals with the skills required for today's advanced manufacturing workplaces. The Manufacturing Institute responded by creating the NAM-Endorsed Manufacturing Skills Certification System to directly address the deficits in manufacturing education and training. The system includes nationally portable, industry-recognized certifications that are combined with for-credit education programs. These education pathways are directly aligned to career pathways in manufacturing. Students progressing through the programs earn college credit toward a degree, a national certification with labor market value and the hands-on technical experience.
- Key points

- Stackable credentials
  - The foundation is the National Career Readiness Certificate (NCRC), issued by ACT (formerly American College Testing Program). It is a portable and evidence-based predictor of workplace success across all industry sectors. The NCRC measures the following skills:
    - Problem solving, critical thinking, Reading and using written, work-related text, applying information from workplace documents to solve problems, applying mathematical reasoning to work-related problems, setting up and performing work-related mathematical calculations, locating, synthesizing, and applying information that is presented graphically, comparing, summarizing, and analyzing information presented in multiple, related graphics.
- Support for industry
  - The system includes support materials and processes to help employers make the best decisions regarding human resources, including:
    - Personal effectiveness: Will they show up on time, ready for work, and be able to work in teams?
    - Essential academic skills in reading, writing, math, and using and locating information: Can they communicate effectively and interpret key instructions?
    - Core manufacturing competencies: Do they understand the basics of safety, quality assurance and continuous improvement, or lean?
    - Key technical skills for the production line: Do they have high-tech skills consistent with the needs of the manufacturing processes?
- Support for education
  - Integrating the skills certifications into education pathways implies that they should become part of degree programs of study, so that a worker can progressively pursue stackable credentials and "bank" credits, engaging in a lifetime of learning. This upwardly mobile ladder directly demonstrates how learning is a continuum throughout a worker's life as more competencies are acquired and documented with a recognized credential. System support includes:
    - Planning and Research: Use data-driven decision making to determine high-growth industries/high-demand occupations, target critical career pathways for development and map manufacturing-related assets and resources.
    - Design and Development: Based on targeted career pathways and programs of study, engage industry leadership to build employer demand and recruit supportive faculty to audit programs against certifications requirements.
    - Implementation: Take action to fill skill gaps in curriculum, provide professional development, develop systems to award certifications and recruit students into target manufacturing-related programs of study.
    - Reassess for Continuous Improvement: Report on outcomes, repurpose for continuous improvement and plan for sustainability.
- Shoreline Community College involvement
  - Participant in creating the NAM-Endorsed Manufacturing Skills Certification System
  - Applying the NAM-Endorsed Manufacturing Skills Certification System to college-level programs such as CNC Machinist and Automotive Technician.
  - Working to expand application to additional programs such as Clean Energy Technology and Biotechnology.
- Links
  - *http://www.themanufacturinginstitute.org/Education-Workforce/Skills-Certification-System/Skills-Certification-System.aspx*
  - *http://www.act.org/certificate/*

Right Skills Now

- Overview
  - Right Skills Now is an acceleration of the NAM–Endorsed Manufacturing Skills Certification System. Right Skills Now fast-tracks and focuses career training in core employability and technical skills by "chunking" relevant curriculum that leads to interim credentials in critical machining skills. While the initial model focuses on machining skills, for which there is immediate demand, the program

can accelerate skills development in other foundational skills areas for advanced manufacturing like production or welding.

- Key points
  - Providing workers and students with fast-track skills for employment.
  - Providing manufacturers with just-in-time talent from the lab/classroom to the shop floor.
  - Accelerating and expanding lifelong learning opportunities for a flexible, technical workforce.
- Shoreline Community College involvement
  - Developed CNC Machining program recently endorsed by Right Skills Now.
  - Disseminated endorsed CNC Machining program to 10 additional colleges in Washington state.
- Links
  - *http://www.themanufacturinginstitute.org/Education-Workforce/Right-Skills-Now/Right-Skills-Now.aspx*
  - *http://www.shoreline.edu/AcademicsNews/blog/default.aspx?id=104&t=Shoreline-leads-state-nation-with-job*

NC3 (National Coalition of Certification Centers)

- Overview
  - The National Coalition of Certification Centers (NC3) was established to address the need for strong industry partnerships with educational institutions in order to develop, implement and sustain industry-recognized portable certifications that have strong validation and assessment standard.
- Key points
  - NC3 is currently focused in three broad areas
    - Transportation
      - Diagnostics, diesel, under-car, vehicle management, multimeter, torque
    - Energy
      - Multimeter, torque
    - Aviation
      - Multimeter, torque
- Shoreline Community College involvement
  - A founding member of NC3
  - President Lambert is incoming Board Chairman
  - Shoreline host of NC3 national train-the-trainer conference
- Links
  - *http://www.nc3.net/*
  - *http://www.shoreline.edu/OnCampus/blog/default.aspx?id=290&t=Shoreline-hosts-NC3-industryeducation*
  - *http://www.youtube.com/watch?v=YbRFInPfWhs*
  - *http://www.flickr.com/photos/shorelinecommunitycollege/sets/72157629486050287/*

Innovation Center

- Overview
  - Shoreline is working with NC3 and its corporate partners such as Snap-on Industrial to create a space for industry-endorsed certifications to not only be delivered, but also be developed.
- Key points
  - Snap-on Innovation Center at Shoreline Community College is a focal point for delivering and developing industry-endorsed certifications and training.
- Shoreline Community College involvement

- Shoreline is home to one of only two Innovations Centers under the sponsorship of Snap-on Industrial.

- Links

- *http://www1.snapon.com/Education*

- http://*www1.snapon.com/industrial/Education/Certification.nws*

- *http://www.flickr.com/photos/shorelinecommunitycollege/sets/72157629486050287/*

Professional Automotive Training Center

- Overview

- Today's automotive technician is not just a "mechanic." The electronic and mechanical sophistication of today's vehicles, along with hybrids and full-electric vehicles means these jobs are highly technical.

- Key points

- Program ranking
  - Toyota ranks the Shoreline program as best in the U.S. for five of the past six years.
  - Honda ranks the Shoreline instructor as No. 1 in the U.S.
  - GM gives Shoreline instructor highest "World Class Technician" rating
- Shoreline offers a number of programs including:
  - Manufacturer-specific training for technicians headed for new car dealerships in Honda, Toyota, GM and Chrysler.
    - About 90 students a year
  - Non-manufacturer specific, short-term training appropriate for employment in independent repair shops and other vehicle service businesses.
    - About 30 students a year
  - Incumbent worker skill-upgrade training in manufacturer-, supplier- or dealer-supported regional centers housed on campus. Skills areas range from dealer-based technicians to under-car services to dealership business training in credit and other back-office services and more.
    - About 10,000 workers a year
  - High-school outreach to support students and instructors in high-school programs
    - Primarily through AYES, an industry-supported outreach program aimed at early identification of automotive industry career paths.
- Puget Sound Auto Dealers Association
  - Significant support for students and program
  - Member participation in capital projects
  - Offices on campus
- Shoreline Community College involvement

- Shoreline invented this collaborative model

- Links

- *http://new.shoreline.edu/auto/*

- *http://youtu.be/BT3OkufOIJ0*

- *https://www.ayes.org/Home.aspx*

- *http://www.psada.com/*

Aerospace industry

- Overview

- The aerospace industry is facing significant labor challenges as the existing workforce nears retirement at the same time new technology and increased production are making increased demands for trained workers. The State of Washington and various stakeholders are making numerous efforts to address the issue.

- Key points

- Boeing and aerospace supplier firms are active participants in creating industry-based curriculum
- Community and technical colleges are collaborating in new ways and greater levels to meet the industry's needs.

- Shoreline Community College involvement
- Shoreline has been a leading partner in the Aerospace Curriculum Alignment Team, a collaborative group of more than 15 community and technical colleges, government, businesses and labor.
- Shoreline's CNC machining instructor created a two-quarter certificate based on industry needs that is now part of the Right Skills Now program and adopted by 10 additional colleges in Washington
- Shoreline offers one-, two- and three-quarter certificates in three program tracks each quarter.
- Programs are offered nights and weekends
- The two- and three-quarter certificates are NIMS certified and part of the NAM-endorsed Manufacturing Skills Certification System
- CNC program placement rate is virtually 100 percent

Industry-based curriculum

- Overview
- More than just teaching what an employer needs a worker to know, industry-based curriculum is an integration of the educational and work settings. The underlying concept is that knowledge is easier to acquire and retain when presented in a way that provides relevance to the student's goals. While it is easy to say, such integration can be difficult to do and requires committed focus on the needs of the student and industry partners.

- Shoreline Community College involvement
- Shoreline uses industry-based curriculum in a number of programs, including:
  - Automotive
    - Instructors in the Toyota, Honda, GM and Chrysler programs use curriculum provided by the manufacturers.
  - Aerospace
    - The two-quarter CNC machining certificate was designed with input and participation from aerospace partners. The program meets specific knowledge, skills and abilities outlined by the industry.

Integrated Basic Education and Skills Training (I–BEST)

- Overview
- In Washington, 400,000 working adults do not have a high school diploma and an additional 1 million adults lack education beyond high school. Only 13 percent of English as a Second Language (ESL) students and less than a third of adult basic education (ABE) students continue on to college-level work. I–BEST pairs workforce training with ABE or ESL so students learn literacy and workplace skills at the same time.

- Key points
- A 2009 study by the Community College Research Center at Columbia University found:
  - ". . . students participating in I–BEST achieved better educational outcomes than did other basic skills students, including those who enrolled in at least one non-I–BEST workforce course. I–BEST students were more likely than others to:
    - Continue into credit-bearing coursework;
    - Earn credits that count toward a college credential;
    - Earn occupational certificates;
    - Make point gains on basic skills tests.

    On all the outcomes examined, I–BEST students did moderately or substantially better than non-I–BEST basic skills students in general.

- Shoreline Community College involvement

- Shoreline currently offers four I–BEST programs involving about 600 students, making Shoreline the largest I–BEST provider in Washington. Programs include:
  - Automotive General Service Technician: In this three-quarter program, students learn the basic automotive technology fundamentals and maintenance procedures to prepare for entry-level positions in the service industry.
  - Manufacturing/CNC Machinist: This one-, two- and three-quarter program prepares students for entry into the high demand job market as a CNC (computer numerical control) Machinist.
  - Certificate in Office Technology: This two-quarter certificate program prepares students to work in a variety of office positions such as receptionist, office clerk, or data entry clerk.
  - Nursing Assistant Certified: This one-quarter certificate program prepares students for entry into one of the highest demand positions in the health care field. Nursing assistants work with registered nurses and LPNs in hospitals, assisted living facilities and nursing homes.
- Links
  - *http://new.shoreline.edu/transitional-programs/ibest/default.aspx*
  - *http://www.sbctc.ctc.edu/college/e__integratedbasiceducationandskills training.aspx*
  - *http://www.flickr.com/photos/shorelinecommunitycollege/sets/ 72157625925620507/*
  - *http://www.flickr.com/photos/shorelinecommunitycollege/sets/ 72157625925608723/*
  - *http://www.flickr.com/photos/shorelinecommunitycollege/sets/ 72157625925600279/*
  - *http://www.flickr.com/photos/shorelinecommunitycollege/sets/ 72157626050975718/*

Career Navigator

- Overview
  - Through a grant from the Aspen Institute, Shoreline Community College partnered with the Seattle-King County Workforce Development Council to create the Automotive Career Pathways program. This program features a highly effective career navigator to provide students with the best career guidance, support while in the program and connection to jobs and continued training after graduation. The navigator works on site with students, but is employed by a WorkSource partner to bridge the gap between the college and the workforce systems. Each student forms a personal connection with the navigator, who:
    - Facilitates the college enrollment and registration process.
    - Helps the student identify financial aid from multiple sources and access these resources.
    - Can help to cover emergency expenses that might otherwise derail a student's training.
    - Connects students with others services available in the community for multiple needs.
    - Work with the student as he or she graduates and gains employment, ensuring that the graduate can keep learning and advancing in the field.

    An evaluation by the Aspen Institute showed that students who enrolled in navigator services were more likely to finish, and afterward, more likely to be employed, working in the expected field and working full-time.
    The model of industry investment and direction, plus quality training based on high standards, plus meeting the non-educational needs of students so they succeed is one that can be replicated throughout the country in multiple industries.
- Shoreline Community College
  - Original grant partner
  - Program success has prompted the college to continue to fund the program from local funds.
- Links
  - *http://www.seakingwdc.org/industry/automotive.html*

○ *http://www.shoreline.edu/AcademicsNews/blog/default.aspx?dtf=2011060100000&dtt=20110630235959*

Senator KLOBUCHAR. Thank you very much.
Ms. Pfarr.

STATEMENT OF MONICA PFARR, CORPORATE DIRECTOR, WORKFORCE DEVELOPMENT, AMERICAN WELDING SOCIETY

Ms. PFARR. Senator Klobuchar and Ranking Member Blunt, thank you very much for this opportunity.

The American Welding Society is an organization of 70,000 members with a mission to advance the science, technology, and application of welding and allied joining and cutting processes.

Senator KLOBUCHAR. Ms. Pfarr, if you could just wait one minute—a vote has been called, so I'm going to go quickly over there and come back. Senator Blunt will leave maybe when I come back, but if it takes too long——

Senator BLUNT. I'd rather listen.

Senator KLOBUCHAR. He will listen. We'll call a recess briefly, and then I'll be back to ask questions. All right. Thank you.

Senator BLUNT [presiding]. All right.

Ms. PFARR. Through our AWS Foundation, we support programs that ensure the growth and development of the welding industry through strengthening research and educational opportunities in welding and related industries. We collaborate with other organizations, like the Weld-Ed Center, funded by the National Science Foundation's Advanced Technological Education Program, to complete our workforce research and outreach.

A common perception for over a decade has been that welding and U.S. manufacturing, in general, is dying. Let me point out a few facts that may help change that perception.

Over 90 percent of the total U.S. durable goods manufacturing uses welding as a critical enabling technology. Welding related occupations provide employment for 986,000 individuals in the United States. Despite being an important part of our economy, the welding industry is faced with some serious challenges.

The average welding professional in the United States is 56 years of age. There is a need for 238,000 new and replacement workers by 2019. Almost daily, newspapers and broadcasts across the nation report very similar headlines. Employers are hiring welding professionals, but they can't find the skilled welders they need. They're offering signing bonuses to qualified welding new hires.

These headlines showcase both the positive and the negative landscape within the welding industry. The lack of skilled applicants is really threatening to derail the growth that we're starting to see in the U.S. economy. The American Welding Society is committed to take a leading role in addressing that challenge.

Through our workforce development efforts, we are engaged in educational outreach to youth, their parents, transitioning workers, and even teachers and career counselors. We have numerous programs designed to engage and educate our target audience about the many advanced and highly technical career opportunities that are available within the welding industry.

One of our most recent and highly visible projects is our new Careers in Welding Trailer, a 53-foot single expandable trailer with 650 square feet of exhibit space. Jointly sponsored by the American Welding Society and Lincoln Electric, it contains five Lincoln virtual reality arc welding simulators. These units feed computer generated data with a welding gun and helmet equipped with internal monitors. Participants practice arc welding in a virtual world. A video gaming component awards each weld a score.

Additionally, the trailer contains interactive educational exhibits, including a display wall featuring 11 industry segments that use welding, fun facts, industry artifacts, and tablets with welding trivia questions. The career wall in the trailer displays the many career pathways that are available in welding, along with the education required, associated industry certifications available, and potential salary ranges. And the scholarship wall details information about the almost $400,000 in scholarships awarded annually by the American Welding Society Foundation.

The Careers in Welding Trailer debuted in October 2011 at the FFA National Conference in Indianapolis, where over 5,000 students virtually welded in 2½ days. The trailer embarks on a 20-week tour this May, exhibiting in events including the Indianapolis 500, youth organizations like FFA and Skills USA, farm shows, air shows, and State fairs, including Texas, New York, Ohio, and Iowa.

Another exciting and recent achievement was the approval of a Boy Scouts Welding Merit Badge. The American Welding Society and its dedicated volunteers were instrumental in the development of the badge, approved by the Boy Scouts just this past fall. The welding badge is part of the Boy Scouts new science, technology, engineering, and math curriculum designed to help Scouts develop critical skills that are relevant and necessary in today's competitive world. The first Scouts were just awarded the Welding Merit Badge this past March in Kansas City.

The American Welding Society is the leader in certification programs that assist the welding industry in identifying qualified welding personnel and provide opportunities for welding professionals to demonstrate their qualifications to the industry. We currently have over 30,000 individuals that hold an AWS certification.

Some of our certifications require industry work experience, while others can be aligned directly with educational programs and integrated into high school and community college programs of study. The integration allows an individual to achieve a portable, industry-recognized certification in addition to his or her education. Many of our certifications are stackable and thus offer opportunities for advancement in education and within the industry.

We collaborate with the NAM and other organizations to promote nationally portable industry-recognized credentials within the manufacturing, education, and industry areas. We believe this will truly help address the skill shortage.

Thank you very much for the opportunity to speak.

[The prepared statement of Ms. Pfarr follows:]

PREPARED STATEMENT OF MONICA PFARR, CORPORATE DIRECTOR, WORKFORCE DEVELOPMENT, AMERICAN WELDING SOCIETY FOUNDATION

Senator Klobuchar, Ranking Member Blunt and members of the Subcommittee, thank you for the opportunity to testify on behalf of the American Welding Society at this Senate Subcommittee hearing on Promoting American Competitiveness: Filling Jobs Today and Training Workers for Tomorrow.

My name is Monica Pfarr, and I am the Corporate Director for Workforce Development for the American Welding Society. Our organization of 70,000 members has a mission to advance the science, technology and application of welding and allied joining and cutting processes, including brazing, soldering and thermal spraying. Through our AWS Foundation, established in 1989, we support programs that ensure the growth and development of the welding industry through strengthening research and educational opportunities in welding and related industries. We collaborate with other organizations, including the Weld-Ed Center, funded by the National Science Foundation's Advanced Technological Education program, to complete our workforce research and outreach.

Welding, the fusing of the surfaces of two workpieces to form one, is a precise, reliable, cost-effective, and "high tech" method for joining materials. No other technique is as widely used by manufacturers to join metals and alloys efficiently and to add value to their products. Most of the familiar objects in modern society, from buildings and bridges, to vehicles, computers, and medical devices, could not be produced without the use of welding.

Welding goes well beyond the bounds of its simple description. Welding today is applied to a wide variety of materials and products, using such advanced technologies as lasers and plasma arcs. The future of welding holds even greater promise as methods are devised for joining dissimilar and non-metallic materials, and for creating products of innovative shapes and designs.

The common perception for over a decade has been that welding, and U.S. manufacturing in general is dying. Let me point out some facts that may help change that perception:

- The United States is the world's largest manufacturing economy, producing 21 percent of global manufactured products;
- Over 90 percent of the total U.S. durable goods manufacturing uses welding as a critical enabling technology;
- Welding-related occupations provide employment for 986,000 individuals in the U.S.

Despite being an important part of the U.S. economy, like manufacturing, the welding industry is faced with some serious challenges:

- The average welding professional in the U.S. is 56 years of age;
- There is a need for 238,000 new and replacement workers by 2019;
- There is a misperception that welding is a dying industry with no future for those that choose the field.

Almost daily, newspapers and news broadcasts all across the Nation report very similar headlines—"Employers are hiring welding professionals"; "Employers cannot find the skilled welders they need"; "Employers offer signing bonuses to qualified welding new hires". These headlines showcase both the positive and negative landscape within our industry.

The U.S. economy is improving, evidenced by the growth we are seeing in hiring. But the lack of skilled applicants is threatening to derail this growth. The lack of skilled applicants is a challenge we must address, and the American Welding Society is committed to take a leading role.

Through our workforce development efforts, the American Welding Society is engaged in educational outreach to youth, their parents, transitioning workers, and even teachers and career counselors. We have numerous programs designed to engage and educate this target audience about the many advanced and high-tech career opportunities available throughout the welding industry.

One of our most recent and highly visible projects is the "Careers in Welding" trailer, a 53 foot single expandable trailer with 650 square feet of exhibit space. Jointly sponsored by the American Welding Society and Lincoln Electric, it contains five Lincoln VRTEX 360 virtual reality arc welding simulators. These units feed computer generated data with a virtual welding gun and helmet equipped with internal monitors. Participants practice arc welding in a virtual environment. A video gaming component awards each "weld" a score. Additionally, the trailer contains interactive educational exhibits including a display wall featuring eleven industry

segments that use welding, fun facts about welding, industry artifacts, and tablets with welding trivia questions. The career wall displays the many career pathways available in welding, along with the education required, associated industry certifications, and potential salary ranges. The "Day in the Life of a Welder" exhibit contains videos depicting real-life environments in which welders work. A life-size welder wearing personal protective equipment highlights welding as a safe profession. And, the scholarship wall details information about the almost $400,000 in scholarships awarded annually by the American Welding Society Foundation.

The trailer was built by MRA Experiential Tours located in Madison Heights, Michigan. MRA hired two welding technology interns from nearby Washtenaw Community College in Ann Arbor, Michigan to work on building the trailer. In addition to the invaluable industry work experience, each student received a $500 scholarship and are interviewed in a video featured inside the trailer.

The "Careers in Welding" trailer debuted in October, 2011 at the FFA National Conference where over 5,000 students virtually welded in 2½ days. The trailer embarks on a twenty week tour this May exhibiting at events including the Indianapolis 500, youth organizations like FFA and Skills USA, farm shows, air shows, and several state fairs including Texas, New York, Ohio, and Iowa.

Another exciting and recent achievement was the approval of a Boy Scouts welding merit badge. The American Welding Society and its dedicated volunteers were instrumental in the development of the badge, approved by the Boys Scouts in Fall, 2011. The welding badge is part of the Boy Scouts new science, technology, engineering, and math (STEM) curriculum, designed to help scouts develop critical skills that are relevant and necessary in today's competitive world. Requirements include learning welding safety and designing and completing a welding project. The first scouts were awarded the badge in March, 2012.

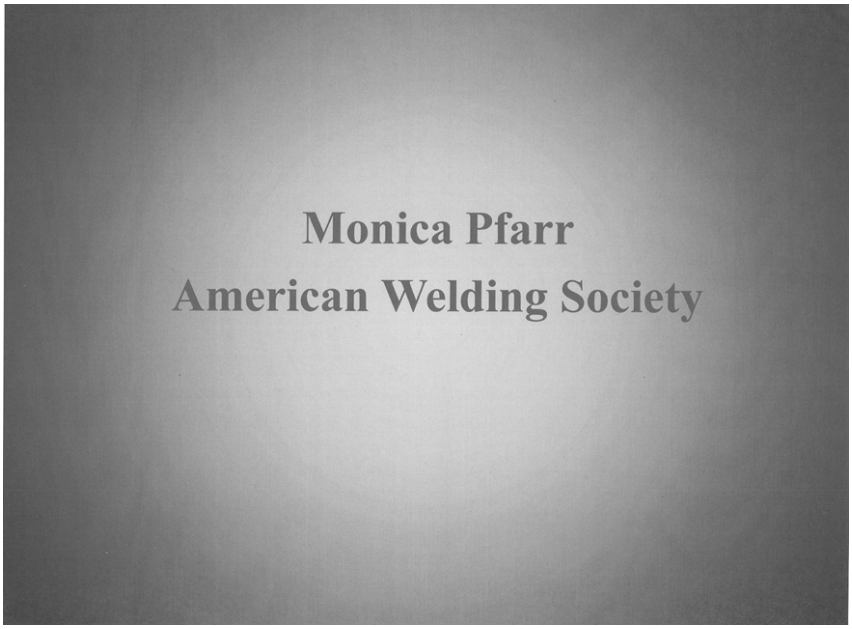
The American Welding Society is the leader in certification programs that assist industry in identifying qualified welding personnel and provide opportunities for welding professionals to demonstrate their qualifications to the welding industry. Currently, over 30,000 individuals hold an AWS certification. Some of our certifications require industry work experience while others can be aligned directly with educational programs and integrated into high school and community college degree programs of study. This integration allows an individual to achieve a portable, industry-recognized certification in addition to his/her education. Many of our certifications are stackable, and thus offer opportunities for advancement in education and within the industry.

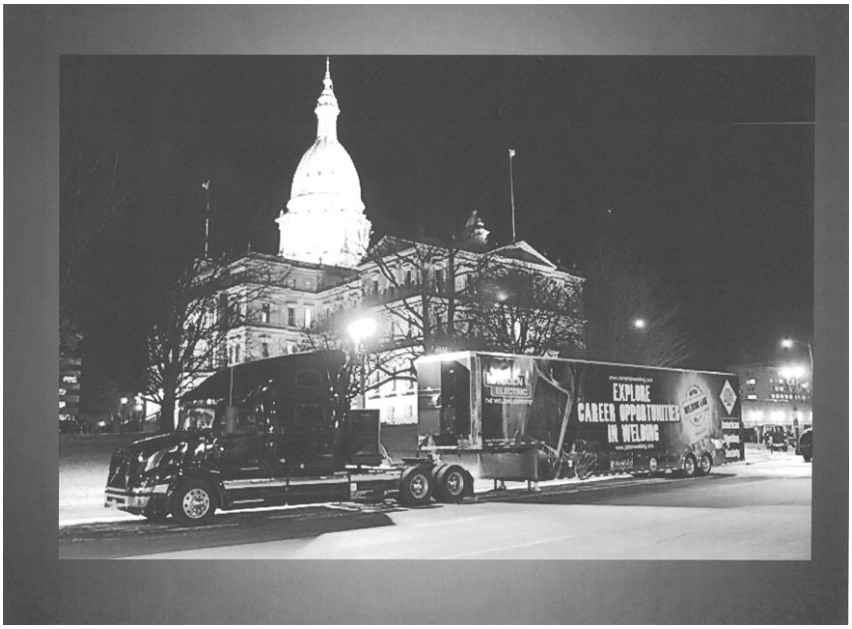
The American Welding Society is collaborating with NAM and other national organizations to promote nationally portable, industry-recognized credentials within the manufacturing education and industry arenas. We believe this approach will help address the skills shortage.

In conclusion, the American Welding Society and its members are committed to engaging and educating the next generation of welding professionals. We are focused on providing skilled, certified applicants for the employers of our industry.

We look forward to working with all of you as we continue these critical efforts.

Thank you for the opportunity to testify today.


Monica Pfarr
American Welding Society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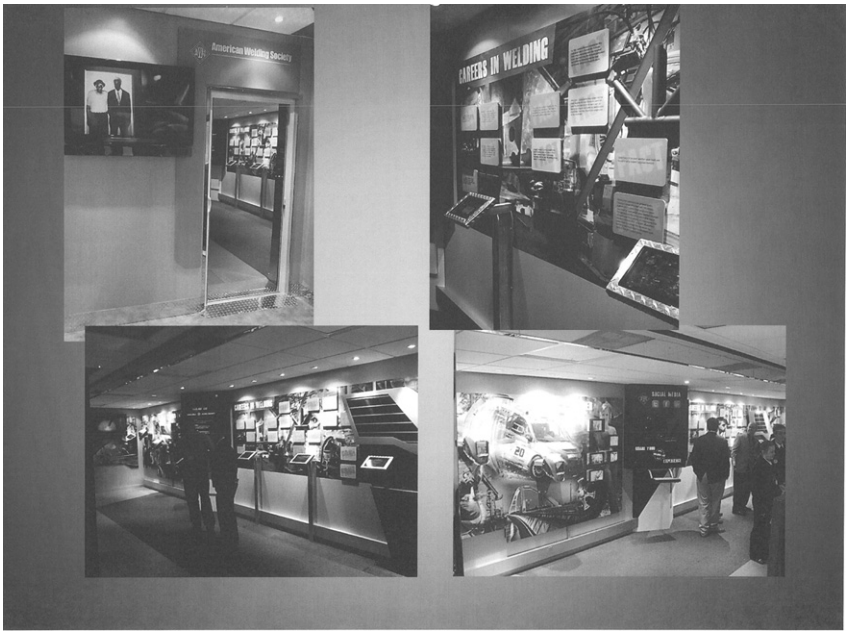
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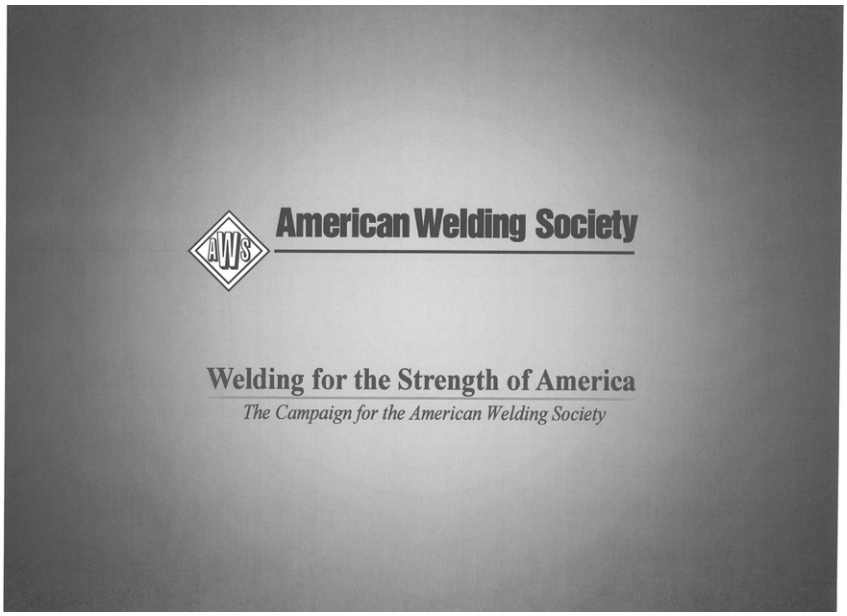


Senator BLUNT. Thank you, Ms. Pfarr.
Ms. McNelly.

STATEMENT OF JENNIFER M. MCNELLY, PRESIDENT, THE MANUFACTURING INSTITUTE

Ms. MCNELLY. Chairman Klobuchar, Ranking Member Blunt, and distinguished members of the Subcommittee, thank you for the opportunity to testify. And I am truly honored to be here with my colleagues, because I think the diversity of the panel actually represents the reality of the challenges we as a Nation face in increasing the skills of our Nation's workforce.

I'm Jennifer McNelly, President of the Manufacturing Institute, the non-profit affiliate of the National Association of Manufacturers. The United States is the world's largest manufacturing economy, producing 21 percent of global manufactured products. Manufacturing supports an estimated 17 million jobs in the U.S., about one in every six private sector jobs.

In 2010, the average U.S. manufacturing worker earned well above the national average in pay and benefits. While manufacturing remains an important economic force in regions across the country, it confronts serious challenges: structural costs, the absence of a coherent and coordinated national trade policy, and lack of a national innovation strategy.

And while these issues and others may play out on the front pages of the newspapers, a more serious threat looms, a threat that not only impacts manufacturing, but also companies in every sector of our economy: the deteriorating condition of our workforce. Our most recent skills gap survey released last October with unemploy-

ment just over 9 percent identified approximately 600,000 open positions due to the lack of a skilled workforce. Eighty-two percent of our Nation's manufacturers reported a moderate to serious shortage in skilled production labor, all impacting manufacturers' ability to grow at a time when we as a nation need job growth.

As a nation, we've created an education system that's almost completely separate from the economy. Traditionally, it was the job of schools to educate children and companies to train employees. To be competitive today, companies need employees who can contribute right away. The only way to address this skills gap and support the economic recovery is to align education, economic development, workforce, and business agendas.

As representatives of the manufacturing industry, we have a solution that fits the needs of our businesses while working within the existing structures of secondary and post-secondary education. Our solution, the NAM-endorsed Manufacturing Skills Certification System, is grounded in the basic skills identified by manufacturers as required to work in any sector of the manufacturing economy and validated by nationally portable, industry-driven credentials.

We're working to align the certifications into high schools and community college programs. And while on the face of it, the idea of skill certifications may not seem transformational, it is, in fact, reforming education, defining the outcome of success, not from completion, but from achievement of an industry-based standard.

For manufacturers, we are applying the same rigor and standards we use in our factories and facilities to our most important supply chain, our human capital. However, success is not attained merely by designing a system. It must create results.

Last summer, we created a fast-track program to meet immediate needs of employers in Minnesota. They needed qualified machinists or doors would close. So partnering with two community colleges, Dunwoody College of Technology and South Central College, we developed a program referred to as Right Skills Now that trains machinists in 16 weeks to a national certification. Early success of the program has led to replication in Nevada and Washington. The Institute is also replicating the model in production and welding.

As manufacturers, we measure what matters. For the past several months, we've been working with Magnet, the Northeast Ohio Manufacturing Extension Partnership Organization, to track through their very rigorous evaluation process the economic impact and value of these certifications. Preliminary data is promising. With five companies, it's already showing results to the company's bottom line: $250,000 in increased sales, $6 million in investments in plants and equipment, 10 jobs created. In addition, the company avoided the potential loss of sales valued at over $2 million because they could hire individuals with the right skills.

These economic outcomes are what we need to support and continue our Nation's recovery and put individuals back to work. We also need to look to align Federal workforce training to industry demands. That's why the NAM supports S. 1243, The America Works Act, that would provide this prioritization. For employers, a focus on nationally portable, industry-recognized credentials provides a level of quality in potential hires that does not exist today. For em-

ployees, it ensures that they obtain the skills in demand for the work place. For government, it ensures Federal investment is used efficiently.

Madam Chairman, for many years, post-secondary success was defined as a four-year degree when a valid, industry-based credential can be the gateway to a well-paying job and a great career. As a nation, we need a new strategy for our manufacturing workforce, grounded in industry standards, with a new and renewed cooperation with industry, education, economic development, and the publicly funded workforce investment system. It's good for manufacturing and good for the nation.

Thank you.

[The prepared statement of Ms. McNelly follows:]

PREPARED STATEMENT OF JENNIFER MCNELLY, PRESIDENT, THE MANUFACTURING INSTITUTE

Chairman Klobuchar, Ranking Member Blunt, and distinguished Members of the Subcommittee, thank you for the opportunity to appear today to testify on behalf of The Manufacturing Institute at this hearing on "Promoting American Competitiveness: Filling Jobs Today and Training Workers for Tomorrow."

My name is Jennifer McNelly, and I am the President of the Manufacturing Institute. We are the non-profit affiliate of the National Association of Manufacturers (NAM) and our mission is to support the Nation's manufacturers through solutions and services focused on education, workforce development and innovation acceleration.

For a generation now, the common perception has been U.S. manufacturing is dying. So it comes as a shock to most people when you point out the actual facts:

- The United States is the world's largest manufacturing economy, producing 21 percent of global manufactured products;
- Manufacturing supports an estimated 17 million jobs in the U.S.—about one in six private-sector jobs;
- In 2010, the average U.S. manufacturing worker earned $77,186 annually, including pay and benefits. The average non-manufacturing worker earned $56,436 annually.

While manufacturing remains an important economic force in regions across the country, it now confronts some serious challenges, including:

- A significant increase in the structural costs facing the industry, caused by both worldwide demand for energy and raw materials and government policies on health care and tax rates;
- The absence of a coherent and coordinated national trade policy; and
- The lack of a national innovation strategy.

While these and other issues play out on the front pages of newspapers and websites, there is another challenge looming in the background, one that threatens not only manufacturers, but also companies in every sector of the economy: the deteriorating condition of our workforce and, in particular, the next generation work force. Our most recent Skills Gap survey, released last October, when the unemployment rate was over 9 percent, identified approximately 600,000 open positions due to the lack of a skilled work force. In fact, 82 percent of manufacturers reported a moderate-to-serious shortage in skilled production labor. All impacting manufacturers' ability to grow at a time when we need job growth.

The U.S. is betting its entire economic future on our ability to produce leading-edge products. Whether it's in IT, biotech, aerospace, construction . . . it doesn't matter. We'll be the ones to constantly create new and better things. This future promises to be bright, but only if we have the workforce capable of pushing that leading-edge. And right now, that doesn't look like a very good bet.

We have created an education system that is almost completely separate from the economy at large. Traditionally, it was the job of schools to educate children and create responsible citizens and it was the job of companies to train employees. Jobs for individuals with almost any education level were plentiful because companies would spend the time and resources to turn them into productive employees. Today,

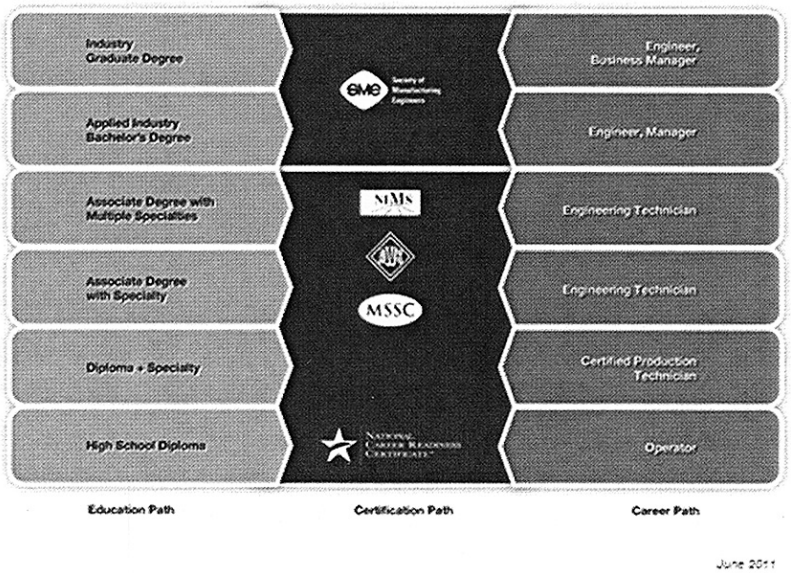
companies cannot afford the luxury of time-intensive training programs for their workers. They need employees who have the knowledge and skills to contribute right away.

The only way to address this monumental challenge and support the economic recovery is to align education, economic development, workforce and business agendas to work in concert and develop the talent necessary for success in the global economy.

As representatives of the manufacturing industry, we think we've found a solution that fits the needs of our businesses while working within the existing secondary and postsecondary education structure.

Our solution, called the NAM-Endorsed Manufacturing Skills Certification System, is grounded in the basic set of skills identified by manufacturers—the employers themselves—as required to work in any sector across the manufacturing industry.

The system is a series of nationally portable, industry-recognized credentials based specifically on those employer-identified skills. These credentials, and the training required to obtain them, certify that an individual possesses the basic skills necessary for a career in manufacturing and ensures that they are useful nationwide and across multiple manufacturing sectors.



Where our system takes the next step, though, is by organizing, aligning and translating those stackable credentials into corresponding educational courses that can be integrated into high-school and community-college degree programs of study. So, an individual can see that if he or she takes the following classes, he or she will have the skills to earn a nationally portable, industry-recognized certification and be qualified to work in the following jobs at the following salaries. We were pleased to have the President of the United States highlight our system last summer.

Our system is integrated into the for-credit side of colleges, so even if a student takes only three or four courses, achieves a certification and heads into the work force, they have "banked" those credits. When they return to achieve the next level certification, they will be working toward a degree as well.

This also creates more on and off ramps in education, which facilitates individuals' ability to obtain schooling when their professional career requires it and also positions them to earn while they learn, applying what they learn in class at night on the job the next day. For many years, postsecondary success was defined as a 4-year degree, when a valid, industry-based credential can provide the knowledge and skills for a well-paying job and a solid middle-class lifestyle, establishing a strong base with a potential to grow.

While on its face, the idea of a skills certification system may not seem transformational, it is in fact reforming education, defining the outcome of success from completion to achievement of an industry standard.

For manufacturers we are applying the same rigors standards we use in our facilities to our most important supply chain, our human capital.

However, success is not attained merely by designing a system. It must create results. Due to the success of our program in over 20 states, we were asked last summer to come in and create a "fast track" system in Minnesota. Employers there needed skilled individuals immediately, not a year from now. So partnering with two Minnesota colleges, Dunwoody College of Technology and South Central College, we developed a program called "Right Skills Now" that trains machinists in as little as 16 weeks. Early success of the program has led to replication in Nevada and Washington. The Institute is also replicating the model in production and welding.

We are helping to ensure that employers hire individuals with the Right Skills, and workers enter training programs that ensure they complete with the Right Skills for employment.

But as manufacturers we measure what matters.

For the past several months we have been working with MAGNET, the Northeast Ohio MEP, to track, through their rigorous evaluation process, the economic impact, the value of these certifications to employers hiring these individuals. Preliminary data is promising. With 5 companies, it already is showing results for the companies including: $250,000 in increased sales; $6,000,000 in investment in plants and equipment; and 10 jobs created. In addition, companies avoided the potential loss of sales valued at over $2,000,000 because they could hire individuals with the right skills, now.

These economic outcomes are what we need to support and continue our Nation's recovery and put individuals back to work.

In addition to private-sector alignments, we need to look at Federal workforce training opportunities that often do not address the skills that are in demand by employers. Programs such as the Workforce Investment Act need to be focused toward a goal of training workers to credentials that are in demand in the private sector. That is why the NAM supports S. 1243, the America Works Act, that would provide this prioritization.

For employers, a focus on a nationally portable, industry-recognized credential system provides a level of quality in potential hires that does not exist today, greatly reducing the risk associated with hiring new employees. For employees, it ensures that they are obtaining the skills in-demand in the workplace and can work in multiple sectors, and for government it can ensure that Federal funds being used for worker training are used more efficiently.

Conclusion

Madam Chairman, for many years, postsecondary success was defined as a 4-year degree, when a valid, industry-based credential can be the gateway to a well-paying job and a solid middle-class career.

As a nation we need a new strategy for our manufacturing work force, grounded in industry standards, with new and renewed cooperation with industry, education, economic development, and the public workforce investment system.

It is good for manufacturing and good for the Nation.

Thank you for the opportunity to testify today. We look forward to working with you to build the next generation manufacturing work force.

Senator BLUNT. I need to go vote. Could I ask a couple of questions real quickly so I could—thank you for your testimony. One is on the skill certification concept that you've talked a lot about—did you hear anything in the first panel that was troubling for you?

Ms. MCNELLY. No, sir. I did not. In fact, we work very closely with our Federal agencies in support of that.

Senator BLUNT. And you feel good about—I mean, both panels now—and, particularly, the Department of Education—talked about the skill certification, and you think that —you're comfortable that you're both headed in the same direction in terms of what's needed there?

Ms. MCNELLY. I think we can always use additional leadership on getting to alignment of the skills certifications into education pathways. I think there is a reality that we face, a challenge in

how our Nation's community and technical colleges are viewed in terms of success and completion.

Right now, if somebody completes a program of study but not necessarily an associate degree, that could be counted as a negative against the college. But if, in fact, we could look to industry credentials as an additional metric for success, I think that would be a win-win for employers.

The other thing is, traditionally, job training has sat on the not-for-credit side of community colleges. And in our view, if industry values it, and it is capstoned with an industry-based credential, that should, in fact, have academic value to allow that student to continue to pursue an associate degree program. So it needs to move back into the education pathway as well.

Senator BLUNT. OK.

And, Mr. Nissanka, I think I'm going to have to read your answer in the record of the hearing, but I'm going to ask the question anyway. What have you been able to do with the Missouri Innovation campus idea to link up students before they graduate with a job that graduation will prepare them to do?

And I'm going to have to go, but I will check on the answer.

Thank you, Chairman.

Senator KLOBUCHAR [presiding]. Thank you very much, Senator Blunt.

Go ahead.

Mr. NISSANKA. Senator, what we are doing is basically starting at a high school level, getting students involved in these activities on a day-to-day basis. They get to train with the company on things that we need done, and then, primarily, they get college level credit that can be now applied when they go into and enroll on a college level.

After that, we would basically drive the curriculum alongside the requirements of the company. And then we would basically have that position there for the individual once they graduate from college.

Senator KLOBUCHAR. Thank you very much.

Mr. Kill, back in February, I attended the unveiling of your annual The State of the Manufacturing Survey in Minnesota. There were hundreds of people there. And would you talk a little more about this poll, what it's designed to measure, why you've chosen to put some resources into it, and really what it showed, particularly with executives who are struggling to find qualified and skilled workers?

Mr. KILL. We believe a second part of our role as an MEP center is to bring visibility to the kinds of careers——

Senator KLOBUCHAR. Do you have your—is it on? There you go.

Mr. KILL.—the kinds of careers that manufacturing provides. And the greatest way to do that is to bring visibility to connect all these different resources. We've done the poll 4 years in a row. The participation of manufacturers has gone from about 35 percent of the attendees to 65 percent. This year, over 1,000 people attended the unveiling of the results. And it is really designed to focus on trends, and as each year goes on, we can look deeper and deeper into the statistics behind it.

It has been a great enabler of interested parties coming together to really address what is becoming the number one issue, and that is attracting a new generation of employees to manufacturing. And I think the poll has clearly raised that visibility and will continue to as we move forward.

Senator KLOBUCHAR. What do you think—you know, one of the things that is helpful is to have you here and several of our other witnesses that are on the ground working on this. What do you think has been working in Minnesota, your top things in terms of—we know we have issues with openings in jobs—but in terms of getting workers interested in those jobs and students interested in those degrees?

Mr. KILL. Well, we have to have manufacturers involved telling the story, not about what it's like to be a welder, but demonstrating the kinds of products that are important to know welding for. So when you show the end product to people, the participation of young people rises incrementally.

I spent a lot of years in manufacturing and never thought that the public-private collaboration was powerful, and I've changed my mind over the last 5 years. And that's what we really have to focus on. The communities, the manufacturers, the economic development folks, the parents—we have to all do our outreach to make sure that people have a choice that they base on their passion and interest, and I think manufacturing will come out ahead.

It is really interesting to watch young people when they see the kinds of things that go on behind the walls. Our community colleges, as you're familiar with, like Alexandria Vo-Tech South Central in Mankato, that are in greater Minnesota away from the metropolitan area have done phenomenal jobs. It's now up to the manufacturers to do their part also to tell the story of the kinds of careers they can provide. And I think they're starting to realize they have to do that, and they are doing that.

Senator KLOBUCHAR. When I think about it, I think of the products that—when I go to these places, high schools—the pool ball racker or the robots playing basketball at the first robotics—that's one I won't forget. So I think that, at least from my perspective, seeing these products and the fruits of the labor, I think, gets people pretty excited about the career.

Mr. Nissanka, in your testimony, you talked about outreach to other companies to co-locate at your training site and participate in the workforce development and apprenticeship program. Can you expand on your experience finding interested companies and if you've experienced any resistance along the way?

Mr. NISSANKA. I think it's on the contrary, Chairwoman. I think what we've found is that once we started the program, we've had a number of companies that were not in the tech park that have come to the program and basically decided that they wanted to locate with us, not to just be within the site, but also to bring in their training needs right onto the Innovation campus.

Senator KLOBUCHAR. How about other things they could do, like donate—companies, if they're interested, donating equipment, donating staff, instruction? Do you think that would be helpful?

Mr. NISSANKA. What we found is that, you know, everybody has a different type of skill that they need, and if we can bring all of

these under one campus in a location where the curriculum ties to what their needs are, companies are willing to put their equipment right into that facility alongside with the campus and start creating those jobs for the future.

Senator KLOBUCHAR. Thank you very much.

Dr. Lambert, one thing that we haven't talked as much about that I think is incredibly important—and it's come to the national light, finally—I remember going to these hearings of the Joint Economic Committee on which I served and looking at those unemployment figures and looking at how they were so significantly higher for veterans, particularly those that have come home from the wars in Iraq and Afghanistan. And it seems to me like it should be the opposite.

Many returning veterans already have technical skills. I think their issue—especially National Guard, Reserve, in Minnesota—they left jobs, and when they came back, those jobs weren't there during the downturn. And I think it's very important to look at what we can do to ease the transition for our soldiers from the battlefield to community and technical colleges.

Could you talk about anything that Shoreline is doing to assist veterans in their education?

Dr. LAMBERT. Yes. Thank you, Madam Chair.

Shoreline Community College is a Center of Excellence for veterans. We received a grant from the Department of Education to create that center. And what we're finding is it's so important to create a wrap-around environment that helps support the veteran's transition, because they're coming from an environment where they get—a lot of what they do is provided for. So what we're learning is we've got to mirror that type of environment so that we make that transition easy into our post-secondary programs.

You know, normally, when you come to us, there isn't someone there that's going to help you navigate the system completely. But for the veterans, that's an expectation. So we built that program with inserting a counselor who is knowledgeable about veterans' issues, that works directly with the veterans.

We've set up a Veterans Student Center that's completely built and geared toward the veterans and the kinds of issues that they face on a day-to-day basis—and then trying to elevate just the significance—the importance of their contributions. I'm also a veteran, so I understand it as a veteran. And my father was a veteran before me. So I take this very seriously in terms of what we can do to support our vets.

Senator KLOBUCHAR. Thank you very much.

Ms. Pfarr, AWS has various certification programs, and you talked a lot about certification today. Some are paper, while others are performance-based. Could you talk about how this certification works and what more needs to be done to ensure that we continue to build a strong credentialed workforce?

Ms. PFARR. Well, you're absolutely right. Some of our credentials are a traditional pen and paper test, while others are performance-based, like our AWS Certified Welder Program. It is a performance-based. You must prove that you have the skill and the ability to weld on a particular process, on a particular material.

We are working with the National Association of Manufacturers, with community colleges, with industry to really implement these certifications into educational programs so that a student graduating from a one-year or two-year program also graduates with that industry-recognized credential, with that certification. So we're working very closely with our partners to implement that.

I mentioned in my testimony that we have 30,000 people in the U.S. today that hold an AWS certification, and we're seeing that continue to grow. So we believe that the efforts that are already underway are going to help ensure that we have a skilled technical workforce moving forward.

Senator KLOBUCHAR. Thank you very much.

Ms. McNelly, could you talk a little bit about the question I asked earlier when we had our leaders from Commerce and Labor and Education up here in terms of this perception of manufacturing jobs among young workers and their parents as well, and how do we shift the thinking so that people begin to see these jobs as advanced, innovative, and high skill, and also can lead to further jobs, further degrees?

Ms. MCNELLY. I'm happy to do that, and I think this also will wrap in support for our transitioning military as well as our transitioning adults. And I will say, as Mr. Kill has noted, we as manufacturers have not been very good about telling our own story. We have been busy making things.

Therefore, what we now recognize is we, in fact, need to be active in the development of education and industry-based partnership. So through our Dream It-Do It campaign, a national campaign that runs across the country in our certification efforts, in 36 states, we are now helping industry to, what I would say is, amplify their voice.

Last week, we were actually at a conference with ACT, whose foundational credential, the National Career Readiness Certificate, is part of the Right Skills Now program that we talked about. And we had a young student on stage who actually, as part of the program in Minnesota, had just completed his first NIM certification. And I asked him the question, "So, tell me, how did you end up in the program?" And, hands down, it was the influence of his mother. He was there because mom said, "You're going."

And I think we need to recognize and respect that next generation careers often come from the greatest influences, which is family and friends. And through our collective work, we need to help parents understand that there are good family sustaining, life-time careers that can happen in manufacturing, and it's not just about training for a job.

This question came up with the previous panel as it relates to always having the skills necessary to be competitive. Our approach in grounding to industry-based standards is to ensure that it constantly reflects the immediate requirements in welding. It's not about the education program, but about the changes in welding technology that then give a benchmark to education to constantly update, too. So using that industry-based standard ensures that the education programs equally stay real-time to changes in technology in the work place.

The other thing that industry-based standards do is—and I'll talk to our transitioning military. Right now, it's not easy to transition them into jobs because they speak two different languages. They speak a military language, and we, as business, speak a business language. And what an industry-based credential does is neutralize the language differences.

So for an individual that is, in fact, in the military that is performing a welding function, it should be our obligation to certify that individual to an AWS standard before they transition out, so when they walk into employment, it's not "I had an MOS code," but it's "I had a set of competencies that I know you need today." So we are actively working with our credentialing partners in each branch of the military service to accelerate that transition that codify what an individual can do.

The same thing applies for our transitioning workforce who may have been in a very low-skilled, rules-based manufacturing environment and now needs new skills. If they know health and safety, let's not put them through a training at Lee's program that reteaches them health and safety. Let's get them the technical skills. And the only way to make that transition unique to the individual and the education institution is an industry standard that clarifies what an individual can do and, therefore, what an education partner needs to train to.

Senator KLOBUCHAR. Very good. I like that Dream It-Do It.

Ms. MCNELLY. Yes, we do, too.

Senator KLOBUCHAR. It's very good. I was thinking when we did this event at Dunwoody, the president of Dunwoody took me around. And what they kept talking about—and really could tell the students are proud of—that they would say the target field, which is this beautiful new ball park for the Twins—OK. They're not having the best season, but the ball park is so beautiful, and everyone's very proud of it.

And they say it wouldn't have been built without Dunwoody, because the height of the construction company that had the contract graduated from there. And they had other relations with contracts and people that worked on it from their school. And just being able to see that product and having something like that to look at, I think, is inspiring for students to see and understand that people that get these kinds of degrees can go on and have really good jobs.

And I think that's our job as educators, and I think more and more I like the points that were made—a business is going to have to come up to the front, because now that we have more people looking for jobs, and it's harder to fill those jobs, they're going to have to play that role as well.

Would anyone else like to comment on the issue I raised, I think, specifically on—anyone that's looked at how Germany does it and how we look at our high schools in terms of getting kids interested in manufacturing and also in science, technology, engineering, and math.

And let me say one of the things I've heard at these high schools is they want to make clear that this track is not just one single track. It can go to a community college, it can go on to engineering, and that the kids that are interested are mixed in together to a certain extent when they're actually doing these projects together,

because that's the team approach that happens when you're actually on the floor.

Correct me if I'm wrong, because I'm not a manufacturer. But you need people that can run the stuff, make the stuff, fix the stuff, with all varying degrees of abilities. So that doesn't necessarily mean while kids might be taking AP classes for one thing in this, when they're actually doing these projects and making things, they can work together and sending that message that it can turn into different tracks and the tracks can change.

So that's what I would love to hear from you guys about in terms of how you think we can do that more at the high school level. And these things are a little more expensive, you know, because they've got to get the equipment, and they can also then maybe go over—bus over to the community college and do it there. But any thoughts on how that works or what you've seen in your states?

Mr. Kill?

Mr. KILL. Madam Chair, a new high school that's going up in a community of about 15,000—and, initially, a large amount of space was going to be dedicated to the arts, because the town said we don't have a theater. The manufacturers working with the community college—and the city is Alexandria—got a little vocal.

And now as you walk into the front door, there will be advanced manufacturing on display. Manufacturers have committed to keeping it with the latest equipment. Haas has also joined in making sure that the latest equipment is there. I think this is how you showcase and influence those decisionmakers—the family.

I'd like to make another point about the Right Skills Now program, because I was a late comer to it, though I heard the announcement when Ms. McNelly was in Minnesota along with other people. Some early statistics—one of the campuses that closed their manufacturing route has reopened it under the Right Skills Now, with 19 enrollees ranging from 18 to 61 years of age, so it's not just tapping new people.

Senator KLOBUCHAR. That's a good point to make.

The parents may not have played as much a role in the 61-year-old's decision.

Mr. KILL. So the average age is 30 years of age, and only half the people reside within 20 miles of the community. So this program—the great connection between the college, a number of other organizations from outside of our state, and the manufacturers, I think, is proving that there's some grass roots ways to attract a broad range of students from young to old.

Mr. NISSANKA. And, Madam Chair, I'd like to add to what Mr. Kill was actually saying. One of the things that we've seen in industry is that we've got to now tie curriculums that are being taught even through high school and through college to what the requirements are in industry. Training has become the biggest issue for me to put up a manufacturing plant and bring those individuals and be very productive and competitive.

So one of the biggest things that we have been doing with the University of Central Missouri is we want to change the curriculum that they are teaching. We have got to align the talents of the individuals with what the industry needs. And what we are doing is we are writing the curriculum around the specific jobs, and

then we are tailoring that with the right individual that wants to do that job.

And what we've seen is—we've seen a significant amount of reaction from students who want to be in the green tech industry who have not had exposure to these specific jobs that we are looking for and are interested in it. Today, a lot of these kids—my daughter, particularly, learns from looking at the Internet, you know. When she has a——

Senator KLOBUCHAR. Really?

Mr. NISSANKA.—research paper, guess what? If she has a research paper, she's on there going through everything on the Net to get all the facts that she needs. So I think what we have to do is enable the students and give them as much of these experiences ahead of time so that they can actually decide where they want to be when they graduate.

Senator KLOBUCHAR. Thank you. Very good. I have a daughter who is 16, so I could completely relate. Her most disastrous moment during my campaign in 2005 was when—a true story—I was asked on a radio show what—if I knew what LOL meant, you know, laugh out loud. And I didn't know what it meant, and she just said, "Mom, that was the most embarrassing thing that's ever happened to our family."

[Laughter.]

Senator KLOBUCHAR. OK. Dr. Lambert.

Dr. LAMBERT. Yes. Madam Chair, last year, in working with Boeing and some of the other aerospace companies in our area, we worked on creating a Career and Job Fair. And we held this job fair up in the north end of King County-South Snohomish, and we bused in students from the local high school as well as folks—and the response was overwhelming.

So we know that one of the things we have to do is work together and start to build an awareness campaign that is more local in its focus and highlights certain sectors. So I think that shows some promising signs.

Another point I want to illustrate is this piece about faculty. Faculty are so critical to the success of the students. But one of the things that's challenging us around the faculty is making sure they stay current to the latest technology.

Senator KLOBUCHAR. Yes, yes.

Dr. LAMBERT. And so I don't want that to get lost, because the challenge has multiple layers to it, not just reaching into the high schools, the middle schools, or working with parents. It's faculty development. It's equipment. It's having the right kind of funding. It's making sure we're connected to the employer networks. So we're working on all these dimensions through the National Coalition of Certification Centers, as well as with the Manufacturing Institute as part of our partnerships.

Senator KLOBUCHAR. Very good. One thing—when you were talking about the veterans before, one of our job fairs that our companies did in Minnesota, which is incredible—is they sent people to the bases in Kuwait while they were still over there. And I'm sure other states have done that. I won't act like we're the only one.

But I do think we're the only one that had a 13,000-steak dinner—I'm not kidding—by our local restaurants that the families

ate at home, the families of the troops, at the same time the troops ate them, and they talked via a video. It was an amazing sight.

But part of this was these employers are now—big major employers are now sending people—because they do need workers—directly to those bases to talk to them about their jobs, so that when they come home, they are going to have a contact and a potential job. So it's a side thing of what you talked about before, but integrates your job fair idea. So very good.

Did you want to—Ms. Pfarr?

Ms. PFARR. Yes, I would like to—thank you. I just wanted to say that that's really the purpose or the goal of our new Careers in Welding Trailer—is to get students, young people, parents in rural communities and communities who may not be exposed to manufacturing and welding careers—get this trailer with virtual simulators out where they have the opportunity to view it, to take a video game type of—piece of equipment and allow kids to try welding in an environment that's very familiar to them.

It really—it's a computer. But it looks like it's a real welder. They're only virtually welding. And it gives them a score at the end, and they very excited about that. It's something that they are used to and comfortable with.

We have engaged a lot of kids into thinking about a career in welding who had never even been exposed to welding before. And so that's really—like I said, the goal of this trailer is just to get out there and inform the masses, if you will.

Senator KLOBUCHAR. Incredibly smart. Yes, I had this kid in one of the high schools—I think Apple Valley—that was showing me on his screen this car he had designed, and he would not stop. I mean, he just kept going—"Now you've got to see this other part. This is really complicated"—and kept showing me the new iterations of what he had done with the car. So doing that, like you said, in a space that they are comfortable with, I think, makes it more exciting as well in high school—and getting the teachers that can do that. Very good.

Do you want to end here, Ms. McNelly?

Ms. MCNELLY. I would love to. And, actually, I'm going to bring up something that didn't quite get talked about but did indirectly, which is—the panel before us actually represented four different Federal agencies, four different funding streams. And the individuals you see at the table—each tap into those in different ways, shapes, and forms.

And what is—though we can sit at a table together and say we can do this collectively, sometimes partnership is difficult, because each of those funding streams have different accountability, which means how Dr. Lambert can use those resources within his labs to train and certify individuals may not necessarily match up to the bureaucracy of reporting that is associated with the Workforce Investment Act or the Carl Perkins Act.

And I do think that we have opportunity, and we are at a unique time in this nation to look at the impact that that has in the end on the employers that sit at this table and the workers that we're trying to move back into good jobs. And from our perspective, 1243 and the America Works Act really puts our businesses and our in-

dividuals in the forefront of what we as a Nation need to accomplish.

So we hope that you take serious consideration in looking at that, because all of us right now have to figure out a difficult way around these opportunities that are huge Federal investments, be it within the Manufacturing Extension Partnership and what we're investing in community colleges and access to workers through the Workforce Investment Act. And partnership isn't easy, because they all look for accountability differently.

So we appreciate the opportunity to be here today and to give voice to this very important partnership that we continue to collectively push forward on.

Senator KLOBUCHAR. Well, very good. And I appreciated how you all talked about working together with our government agencies in a positive way. I know there's always problems and frustrations and rules, as Senator Ayotte has pointed out.

But I also think that we have to work on this together, because there is going to—this is so incredibly important for the future of our country and for making things in America and nation-building in our own Nation and this idea that we're going to make stuff again and invent things and export to the world. So as we're dealing with these mega issues, which are going to start, believe me, by the end of the year with the budget, as well as into next year with tax reform, we can't have infighting. We're going to have to work as a team, those of us who believe in this job training and education as part of moving forward.

So I wanted to thank all of you for being here. We had some great senators here to hear what you had to say, and we had some really good staff here as well. I wanted to specifically thank my staff who put this hearing together. Kate Geldaker—it is her birthday. Right, Kate? We don't usually sing Happy Birthday. Elizabeth Frosch, who does our education work and did a great job on this, and Paul Zygmunt, who does our business work and is back at the office right now in a meeting—but I want to thank them and all the staff on the Commerce Committee as well, Senator Blunt's staff and others that worked on putting this together.

Thank you very much, and we will keep the record open for 2 weeks. And the hearing is adjourned.

Thank you.

[Whereupon, at 12 noon, the hearing was adjourned.]

A P P E N D I X

RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. AMY KLOBUCHAR TO HON. MARTHA KANTER

Question. Can you explain why the Department of Education has reduced funding to the McNair Postbaccalaureate Achievement program, which supports low-income, first-generation and otherwise underrepresented students in obtaining doctoral degrees?

Answer. Congress provides one appropriation for all the TRIO programs, including the McNair Postbaccalaureate Achievement (McNair) program. Each year the Department distributes the appropriation to each of the TRIO programs to provide the most benefits to students and taxpayers. This year, the Department reallocated $10 million from the McNair program to the Upward Bound Math and Science (UBMS) program to support efforts to improve science, technology, engineering, and mathematics education and to help the Nation advance toward meeting the President's goal of leading the world in college attainment by 2020. By moving these funds into UBMS, we can serve an additional 900 low-income, first generation students though the TRIO programs without a single additional dollar of Federal money. Total funding for the TRIO programs remains the same, and we remain committed to all of the TRIO programs. Even with the funding change, we still expect to support over 150 McNair projects in Fiscal Year 2012.