

Testimony of

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Promotion

Promoting American Competitiveness: Filling Jobs Today and
Training Workers for Tomorrow

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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 alone¹. Both U.S. and foreign-based manufacturers are increasingly choosing the United States 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 Manufacturing² 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 availability of qualified workers, even in a period of elevated general unemployment.³

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

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

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 2012⁴ 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 College⁵ 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 FY 2010, MEP interacted with over 34,000 manufacturers and did project work with nearly 10,000 clients that

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/>

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

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

Reinvestment Act High Growth and Emerging Industries 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 17th, 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.



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Roger Kilmer is the Director of the Manufacturing Extension Partnership (MEP), a program of the U.S. Department of Commerce's National Institute of Standards and Technology (NIST). MEP is a nationwide network of resources transforming manufacturers to compete globally, supporting greater supply chain integration and providing access to technology. MEP is a public-private partnership program leveraging federal support by teaming with industry as well as state and local organizations. With over 370 manufacturing extension offices located in all 50 states and Puerto Rico, MEP provides companies with services and access to resources that enhance growth, improve productivity, and expand capacity. MEP works with companies that are willing to invest in their future, to make improvements in the short term, and to position themselves to be stronger long-term competitors, both domestically and internationally.

Mr. Kilmer has been with the MEP program since 1993 and with NIST since 1974. Previously, Mr. Kilmer was the MEP Deputy Director, serving as the chief operating officer and chief financial officer responsible for internal operations, programmatic coordination, and policy review of all activities. From 1990 to 1993, Mr. Kilmer was the Deputy Division Chief of the Robot Systems Division in the NIST Manufacturing Engineering Laboratory. In this position, he was responsible for establishing and managing research programs involving real-time sensor-based control of intelligent machines. Prior to that, Mr. Kilmer was also Group Leader in the Robot Systems Division, managing research and development programs with manufacturing and military applications including robotic deburring, automated lay up of thermoplastic composites, robotic safety systems, robotic handling of munitions, and unmanned land vehicle operations.

Mr. Kilmer has received the U.S. Department of Commerce Gold Medal Award for the CommerceConnect initiative, the Silver Medal Award for leadership as the NIST MEP liaison to the interagency Technology Reinvestment Project (TRP) initiative, and the Bronze Medal Award for superior leadership of NIST's unmanned ground vehicle robotics program.

Mr. Kilmer holds a Master of Science and a Bachelor of Science in Mechanical Engineering from Pennsylvania State University.