

TESTIMONY OF GARDNER CARRICK, VICE PRESIDENT, STRATEGIC INITIATIVES
THE MANUFACTURING INSTITUTE
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Chairman Brat, Ranking Member Evans, and members of the Subcommittee on Economic Growth, Tax, and Capital Access, thank you for the opportunity to testify about the workforce challenges facing small manufacturing companies in the United States.

My name is Gardner Carrick and I am the Vice President of Strategic Initiatives at the Manufacturing Institute. We are affiliated with the National Association of Manufacturers, the nation's largest industrial trade association and voice for more than 12 million men and women who make things in America.

It is the mission of the Institute to attract, train and develop the world-class talent that manufacturers need to compete in the global economy. In partnership with some of the country's leading firms, we identify trends and gaps in manufacturing skills and training and, working with partners around the country, we develop programs to close those gaps. Among our many initiatives, our Dream It. Do It. program has partners in 41 states and regions to develop interest in manufacturing skills among youth, and programs with educational institutions that cultivate their interest in manufacturing and ensure that the skills being taught are ones that are in need by manufacturers. Additionally, the National Association of Manufacturers recently launched a nationwide campaign to improve the perception of manufacturing via the recently announced "Creators Wanted" campaign, to improve the perception of manufacturing as a career path. The Manufacturing Institute will be engaged in this effort to help educate the public about manufacturing careers and to direct those who are interested to programs and activities to further their skills and toward high skilled jobs.

Manufacturing is a critical component of our nation's economy. Companies in manufacturing produce everything you see around you. While everyone has heard of the biggest companies in manufacturing, it is small companies that are the backbone of the industry. The vast majority of manufacturing firms in the United States are quite small. [According to the Top 20 Facts About Manufacturing published by the National Association of Manufacturers](#), in 2014, there were 251,901 firms in the manufacturing sector, with all but 3,749 firms considered to be small. In fact, three-quarters of these firms have fewer than 20 employees. They provide good jobs in every city, town, and community across the country. And today, manufacturing is enjoying a renaissance in the United States.

Since the end of the last recession, manufacturing companies have added over 1 million jobs and in this year alone, companies have added nearly 140,000 new jobs. Companies are choosing to locate new operations in the U.S. and this is having a growth effect down the entire

supply chain. And companies are optimistic about the future as well. [According to the most recent Manufacturers' Outlook Survey from the National Association of Manufacturers](#), 90% of companies are optimistic about their own company's outlook.

While times are good for manufacturing in the U.S., there is a present and growing challenge for manufacturing companies – they are unable to find people with the skills required to fill their open jobs.

According to the United States Department of Labor, there are nearly 400,000 open jobs in manufacturing. This is up 13% from the end of last year, and 36% from just two years ago. Looking at the longer-term picture, a study done by Deloitte in partnership with the Manufacturing Institute estimated that, by 2025, there could be as many as 2 million unfilled positions in manufacturing. These jobs offer family supporting pay, generous benefits, and strong career growth potential. [According to the Top 20 Facts About Manufacturing published by the National Association of Manufacturers](#), in 2015, the average manufacturing worker in the United States earned \$81,289 annually, including pay and benefits. The average worker in all nonfarm industries earned \$63,830. Looking specifically at wages, the average manufacturing worker earned over \$26.00 per hour, according to the latest figures, not including benefits. These jobs need to be filled if the manufacturing sector and the U.S. economy is going to remain strong and globally competitive. Fortunately, manufacturing companies are stepping up to offer solutions to this challenge, in partnership with local high schools, community colleges, and technical schools.

The activities of manufacturers fall into two broad categories: 1) filling the immediate needs for skilled workers; and 2) strengthening interest in manufacturing careers to fill the long-term need for skilled workers. I would like to highlight a few examples of where smaller companies are engaged in these activities.

In the Tucson, AZ region, a group of twenty small manufacturers formed an organization called the Southern Arizona Manufacturing Partners. Working with the local high school district, Pima Community College, and the workforce system, the Southern Arizona Manufacturing Partners created a 20-month apprenticeship-style program. Graduating high school seniors interview with and are hired by one of the participating companies. They then enroll at Pima Community College in machining, eletromechnical systems, or another industrial technologies program where they receive concurrent instruction in their new field of employment. This innovative program has enabled small companies to aggregate their skill requirements and hiring demands and receive recognition and support from the local educational institutions and workforce services agency. The program has grown to where several dozen students now participate annually. The Manufacturing Institute has a strong partnership with Pima Community College and has supported this apprenticeship-style program from its inception.

In Tulsa, OK, coalition of workforce, education and industry partners dedicated to raising awareness of manufacturing careers joined the Manufacturing Institute's Dream It Do It program. As part of the Dream It Do It activities, a small auto parts manufacturer called APSCO created an internship program for high school students who are interested in a manufacturing career. Students from three area high schools tour APSCO's automotive parts fabrication and assembly facility in the fall and interested students are interviewed and selected for its Certified Production Technician internship program. Interns train as a production technician for three hours a day from January to May and are paid \$10 an hour. 45 students participated in this past year's program and APSCO has coordinated with other small manufacturers in the region

so that those students not hired by APSCO at the completion of the program have interview and employment opportunities at other local manufacturing companies.

Across nine states on the Gulf Coast and in the lower Midwest, there has grown a manufacturing-led program called the Federation for Advanced Manufacturing Education. Originally started by Toyota Motor Manufacturing in Kentucky, FAME is a five semester apprenticeship style degree program where students spend three days a week at work and two days a week in school learning the technical skills, manufacturing culture, and soft skills necessary to be an Advanced Manufacturing Technician. Though Toyota was the original sponsor, they opened the program to all companies and now hundreds of small manufacturers are participating with the twenty partner community colleges, hiring hundreds of new employees annually. And it is a model that is now expanding to include other in-demand positions within manufacturing. This is an excellent example of how larger companies support and partner with smaller companies to create an education, training, and employment program that benefits the entire manufacturing industry and the communities where they are located.

While these programs are training students and hiring new employees for immediate job openings, there is still a longer-term concern about the number of young people willing to consider and pursue a career in manufacturing. This has been a multi-decade challenge for manufacturers that is now a critical concern as total jobs in manufacturing have rebounded and continue to grow. The Manufacturing Institute has partnered on several research studies to inform the best strategies for attracting young people to our industry.

In a nationwide survey of high school students, the Manufacturing Institute, in partnership with the Educational Research Center of America, found that the overwhelming majority of them selected their own experiences and interests as the most important factor in determining what career to pursue. And in a Public Perception of Manufacturing study, conducted by the Manufacturing Institute in partnership with Deloitte, Americans that were familiar with manufacturing were twice as likely to pursue a career in manufacturing or encourage their children to do so. These results suggest that the best way to encourage more Americans to consider careers in manufacturing is to provide them with experiences that increase their familiarity with today's modern manufacturing industry.

Allow me to highlight a few examples of small manufacturing companies that have done just that.

Five years ago, working with the Founding Partner, the Fabricators and Manufacturers Association, International, the Manufacturing Institute and the National Association of Manufacturers helped create a new nationwide showcase of our industry called Manufacturing Day. Companies would open their doors on the first Friday of October and invite the community to see what modern manufacturing looks like in their plant. That showcase has now grown to nearly 3,000 events and half a million participants.

In Southern California, a small aerospace parts manufacturer called ACE Clearwater has made Manufacturing Day a really big deal. Last year, ACE Clearwater had over 500 parents, teachers, and students witness and participate in modern-day manufacturing. Exhibits like 3D printing, laser cutting and water jet demonstrations, hands-free computer interaction, hydro-forming, virtual reality headsets, and welding simulations were provided by ACE and sponsor suppliers to give attendees an in-depth understanding of state-of-the-art manufacturing. The event features at least 15 work centers where students learn all about the manufacturing process and new technologies that make manufacturing exciting and creative. At the

conclusion of last year's event, nearly 50 participating community college students immediately applied for open positions

In Mequon, WI, a small fabrication company called GenMet has been extremely active on workforce issues including serving on the Manufacturing Institute Board of Advisors. One of its most innovative programs is a teacher externship. Over the past few years, GenMet has hired three local high school teachers to work for the summer in its facility. As a result, these teachers have a better understanding of concepts they teach in their classroom using what they learned at GenMet. Teachers are able to use real-life analogies to explain to their students what they learned from their experience. By hiring teachers, GenMet can reach an entire classroom of students and help change the perception of manufacturing showing teachers what modern manufacturing looks like.

And finally, in Pennsylvania, there is a competition to create the best 2-minute video describing What's so Cool about Manufacturing. Started by the Manufacturers Resource Center in the Lehigh Valley as part of the Manufacturing Institute's Dream It Do It program, the competition pairs a team of eighth grade students with a local manufacturer where they interview employees and executives and film the operations of the plant. The students then create and narrate a video about why their company best describes What's so Cool about Manufacturing. The community then votes on the videos through YouTube and the Manufacturers Resource Center hosts an awards banquet at the conclusion. The results in Lehigh Valley have been stunning, where last year over 100,000 votes were cast on YouTube, over 800 students, parents, companies, and community leaders attended the awards banquet, and most importantly, the local technical high school manufacturing programs have seen a 60% increase in enrollment since the competition began 5 years ago. The video competition idea has now spread across the Commonwealth and this year, 200 middle schools will partner with 200 hundred manufacturing companies in eight different regional competitions. It is an excellent example of how small companies can partner with middle schools to make a significant impact on a student's perception of manufacturing just as he or she is deciding what to study in high school.

Mr. Chairman, the manufacturing sector has struggled to find the right workers and it is impacting our ability to successfully compete in the global economy and grow our industry. But companies large and small are creating and participating in programs that will solve these challenges. I am proud of the work of these companies and The Manufacturing Institute and the National Association of Manufacturers will continue to support these efforts in regions all across the country.

Mr. Chairman, Manufacturing Day is on October 6th, less than a month from now. I encourage you, the members of this subcommittee, and all the members of Congress to attend one of these events. Come see what modern manufacturing looks like and speak with some of the 12 million men and women that make American manufacturing strong.

Thank you for the opportunity to testify this morning.