

Testimony of
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Commerce, Science, and Transportation Committee
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Promoting and Investing in Small American Manufacturers
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Thank you for the opportunity to testify today, and for focusing on the vitally important issue of promoting and investing in small American manufacturers. My name is Carrie Hines, and I am the President and CEO of the American Small Manufacturers Coalition (ASMC), the trade association of the nation's manufacturing extension agents or Manufacturing Extension Partnership (MEP) centers and partners.

The Manufacturing Extension Partnership Program

The MEP program is a federal public-private partnership that provides small- and medium-sized manufacturers (SMMs) technology-based services they need to thrive in today's global economy and create good-paying manufacturing jobs. MEP is managed by the National Institute of Standards and Technology (NIST) and implemented through a network of industry-led centers located in every state. MEP centers are not-for-profit corporations that employ industry experts who work directly with manufacturers. MEP's role in the manufacturing industry is critical to national security and the nation's economy. Manufacturing is one of our country's greatest economic strengths, producing more than 11 percent of GDP.¹ Nearly 99 percent of manufacturing firms in America are considered small, with fewer than 500 employees.²

As a public-private partnership, MEP delivers a high return on investment to taxpayers. The Upjohn Institute for Employment Research conducted a study of MEP in 2020 and found that the program generates a 13.6:1 return on investment.³ According to an annual survey conducted by an independent firm, in 2021 MEP clients reported \$14.4 billion new and retained sales and the creation or retention of 125,746 jobs.⁴ Considering that the average U.S. manufacturing worker earned \$95,990 in wages and benefits in 2021, MEP clients are economic drivers in their communities.⁵ MEP clients are also increasing their capacity for the production of goods. Since

¹ See NIST, "Facts About Manufacturing Infographic," available at <https://www.nist.gov/mep/manufacturing-infographics/facts-about-manufacturing>.

² See National Association of Manufacturers, "Facts About Manufacturing," available at <https://www.nam.org/facts-about-manufacturing/>.

³ See "The National-Level Economic Impact of the Manufacturing Extension Partnership (MEP): Estimates for Fiscal Year 2020," at 2.

⁴ See NIST, "MEPNN FY21 Impacts Overview," available at https://www.nist.gov/system/files/documents/2022/02/15/MEPNN%20FY21%20Impacts%20Overview_FINAL-508.pdf, at 1.

⁵ See National Association of Manufacturers, "Facts About Manufacturing," available at <https://www.nam.org/facts-about-manufacturing/>.

1988, “MEP played a critical role in supporting the U.S. economy and worked with over 132,400 manufacturers, leading to \$138.8 billion in new sales, \$26.2 billion in cost savings and helped create and retain over 1.45 million jobs.”⁶

CHIPS and Science Act Expansion Awards

Growing and expanding the MEP program is essential as a matter of national security and economic prosperity. The CHIPS and Science Act included new authorities to expand the MEP program by providing additional “expansion awards” above and beyond a Center’s base funding. These awards would enable Centers to provide expanded services in critical areas such as workforce, supply chain, advanced manufacturing, and cybersecurity. The expansion awards give the Centers the flexibility they need to help rebuild and modernize our industrial capacity.

The new authorities help MEP provide services to small manufacturers that benefit the manufacturing industry and the nation as a whole, but that are difficult for manufacturers to budget for because they do not directly impact each individual manufacturer’s bottom line - services such as workforce programs, supply chain intelligence/connections, and technology application. Because these capabilities are important for the country to develop, and because manufacturers are not in a position to invest in them individually, it is appropriate that the CHIPS and Science Act enabled MEP to invest in these areas and for that investment to be exempt from MEP’s ordinary cost-share requirements.

Workforce

The US manufacturing industry faces three primary workforce challenges: recruiting enough workers, training new workers, and upskilling current workers so that they can adapt to state-of-the-art capabilities. MEP Centers have been addressing each of these challenges in their work with small and medium manufacturers across the country for decades by leveraging existing state and local resources. But the new authorities allow the Centers to combine their efforts, share best practices and programmatic resources, and further leverage each other’s investment to scale-up workforce programs nationwide.

According to MEP client survey data, 63% of small and medium manufacturers report that employee recruitment was one of their top three business challenges in 2021.⁷ MEP Centers address the nation’s manufacturing industry recruiting challenge in several ways. Centers educate K-12 students about manufacturing and build awareness among students and young adults about high-quality careers available in manufacturing. Centers also help manufacturers develop videos and other recruiting materials to help them raise their profiles in the local job market.

⁶ NIST, “National Institute of Standards and Technology: National Technical Information Service Fiscal Year 2023 Budget Submission to Congress,” available at <https://www.commerce.gov/sites/default/files/2022-03/FY2023-NIST-NTIS-Congressional-Budget-Submission.pdf>, at p. NIST-123.

⁷ See “MEPNN FY21 Impacts Overview,” https://www.nist.gov/system/files/documents/2022/02/15/MEPNN%20FY21%20Impacts%20Overview_FINAL-508.pdf, at 1.

Training is another key way that MEP Centers address the industry's workforce challenges. A pre-COVID Deloitte report predicted that "over the next decade nearly 3½ million manufacturing jobs likely need to be filled. The skills gap is expected to result in 2 million of those jobs going unfilled."⁸ If anything, the situation is worse post-COVID. Many job seekers lack the basic employability and mechanical aptitude necessary for manufacturing employment. MEP Centers promote high school manufacturing apprenticeships, develop curricula with community colleges for manufacturing credential programs, engage in virtual reality-based manufacturing training, and provide manufacturing training in prison to prepare incarcerated individuals to return to society with valuable skills.

Because the industry evolves rapidly, upskilling current employees is vitally important. SMMs need new and upskilled workers with training in "Industry 4.0" advanced manufacturing and technology (particularly as American-made manufacturing grows under recent federal legislation and initiatives), while at the same time a new generation of workers needs better training and skills, particularly individuals most impacted by industrial and service sector changes, coal community decline, and post-COVID employment disruptions. MEP Centers help manufacturers train employees in a wide variety of cutting-edge technologies, such as: using artificial intelligence to maximize the value of the data generated by smart manufacturing tools; using machine learning to baseline equipment performance, identify and alert machine abnormalities; training employees on new safety rules and regulations; and operating 3D printers and other advanced tools.

Supply Chain

During the pandemic, America depended on its manufacturers more than ever before - and our manufacturers rose to the occasion, displaying unprecedented agility and innovation in extremely difficult circumstances. Nevertheless, the pandemic highlighted two critical supply chain needs: first, maximizing the nation's domestic manufacturing capabilities, especially for critical products; second, enhancing resilience by identifying and eliminating single points of failure. With additional CARES Act funding of \$50 million, MEP Centers were able to serve 5,396 manufacturers with 7,506 projects. Of these manufacturers, nearly half had never worked with MEP before. The Alaska MEP Center, for example, helped match those in need of PPE with over 70 local manufacturers producing PPE and helped a number of Alaskan manufacturers covert their operations to produce PPE.

The pandemic, natural disasters and recent international conflict also brought to light the criticality of supply chains in bringing products to market. MEP's unique National Network and reach to the nation's small manufacturers puts it in prime position to help mitigate risk and respond to the industry's needs, sometimes with just hours' notice. Recently, FloridaMakes (Florida's MEP Center) received an urgent request for defibrillators and related accessories needed to stock field clinics and hospitals in the Southwest Florida region in the wake of Hurricane Ian. FloridaMakes immediately forwarded the request to MEP Centers nationwide and within hours, MassMEP (Massachusetts's MEP Center) located a Massachusetts-based supplier who could provide the parts needed. Within just 6 hours of receiving the request, a \$1.9

⁸ "The Skills Gap In Manufacturing, 2015 and Beyond," <https://www.themadeinamericamovement.com/wp-content/uploads/2017/04/Deloitte-MFG-Institute.-The-Skills-Gap-in-the-US-MFG-21015-and-Beyond.pdf>, at 2.

million contract was signed and executed between the Florida non-profit establishing the field clinics and the Massachusetts-based manufacturer. It is no exaggeration to say that the MEP National Network played a critical role at a time of great need for the people of Florida.

The CHIPS and Science Act includes authority for a Supply Chain Database, funding for which can be provided through Expansion Awards. The database will help MEP realize its full potential as a nationwide manufacturing supply chain intelligence network.

Hydraulic.net, a Florida-based manufacturer and distributor of hydraulic pumps and other components for agriculture equipment, had been sourcing some cast-iron and steel parts from a supplier in the Kharkiv region of Ukraine, and was forced to scramble for new sources once Russia invaded in February 2022. Florida's MEP Center looked for sources in Florida and was not able to identify any appropriate casting suppliers that met their needs, but the Center used a national supply chain platform to link the manufacturer with casting houses in Illinois and Indiana. As a result, they were able to source their castings domestically.

To help US manufacturers comply with Buy American requirements, the MEP National Network connects them to domestic suppliers through its Supplier Scouting service, which leverages MEP's extensive nationwide supplier relationships and knowledge of US manufacturing capabilities. The Wisconsin Center for Manufacturing & Productivity [helped Northstar Medical Radioisotopes work within the structures of the Buy American policy to bring domestically manufactured, environmentally sound molybdenum-99 \(Molly 99\) to the US market. Molly 99 is critical for medical imaging and diagnosis – and is traditionally sourced from foreign producers. Northstar Medical Radioisotopes used a cooperative agreement from the DoE to develop a new approach to manufacture this critical material. The MEP in Wisconsin helped the company negotiate the Buy American requirements and connect it to new medical markets.](#)

Energy

In addition to the CHIPS and Science Act, the Inflation Reduction Act and the Infrastructure Investment and Jobs Act provide tremendous opportunities for the small manufacturing supply chain, particularly in the energy sector. Commitments at every level of American government plus robust market forces are bringing increasing demand for manufactured goods and innovative technologies for a “new energy economy” in the sectors of renewable energy, hydrogen power, low-carbon power, smart grid improvements, green buildings, electric vehicles, energy efficiency, and other smart energy and reduction innovations.

While the opportunities for manufacturing, supply chain expansion, and good jobs are tremendous, the challenge is that most SMMs are based in traditional industry sectors, far behind the curve on green manufacturing and smart energy approaches, disconnected from new energy economy supply chains, unaware about how new federal stimulus programs will operate, and lacking a skilled workforce to fulfill these emerging markets. For example, the Illinois Manufacturing Excellence Center (the Illinois MEP Center) has 17 US Department of Labor registered apprenticeships, including four focused on jobs in for the electric vehicle supply chain. There is a need to rapidly expand these types of rigorous and industry-relevant training models,

which can be accomplished through the Expansion Award program. Busy manufacturers do not have the time or capacity to harness these new energy economy opportunities alone, and need robust technical assistance to get there.

MEP provides that technical assistance through the programs described above. There is a key opportunity now to ensure that the new energy economy's technologies and products are manufactured by workers in America. The MEP Centers across the US will help manufacturers navigate the new energy economy, enter new supply chains, retool factories, and make the parts and products needed for a diverse clean energy economy - all while ensuring that the future of manufacturing is cleaner and energy smart.

Advanced Manufacturing Services

The MEP program is uniquely positioned to make significant advances in manufacturers' implementation of advanced technology given the program's national reach. National labs, manufacturing institutes and higher education's technology labs do a great job of creating advanced technology and research but lack the national reach that the MEP program possesses to get that technology to industry. The expanded authority in the CHIPS and Science Act would allow MEP Centers to bring that technology and research to the manufacturer by partnering with technology demonstration labs to showcase how technology can be applied to improve manufacturing processes, increasing the industry's competitiveness on a manufacturer-by-manufacturer level. The MEP National Network's comprehensive coverage enables this to take place on a truly national scale.

Cybersecurity

An area of increased concern is small manufacturers' vulnerability to cybersecurity attacks. Manufacturers of all sizes are relying more on data, information and technology to operate their business, all of which can leave them vulnerable to cyber attacks. The biggest challenges that small manufacturers face in implementing effective cybersecurity are a lack of awareness, time, and resources. MEP Centers are ideally suited to address these challenges by acting as the primary source for cybersecurity information and best practices for manufacturers. MEP Centers already work with small manufacturing clients to implement the NIST cybersecurity framework.

For example, since about 80 percent of the work at Michigan-based Linear Motion is for the Department of Defense (DoD), it was imperative that the company follow DoD's requirements to achieve Cybersecurity Maturity Model Certification (CMMC). The Michigan Manufacturing Technology Center conducted a cybersecurity assessment of its requirements to comply with the Defense Federal Acquisition Regulation Supplement (DFARS) and implementation of NIST 800-171. The Center then conducted several days of mentoring to help Linear Motion satisfy the necessary requirements to successfully reach CMMC Level 3. As a result, Linear Motion retained \$16,000,000 in sales and 128 retained jobs. MEP's work in cybersecurity has been recognized in past NDAA legislation authorizing the DoD to provide financial assistance to expand that capacity.

The CHIPS and Science Act provides financial assistance for MEP to expand these services for both awareness and implementation through the Expansion Award program.

Conclusion

The MEP National Network has made an indelible impact on the small manufacturing community over its nearly 35- year history. Thanks to the CHIPS and Science Act, MEP is positioned to take the US manufacturing industry to the next level given its reach, connectivity and impact. This cannot be done without increased federal funding to implement the new Expansion Award authority.

The CHIPS portion of the bill will challenge the American small manufacturing community to provide a properly skilled workforce and robust supply chain in support of increased semiconductor manufacturing. This challenge can become an opportunity for small manufacturers, if they are properly prepared. With Expansion Award authority and funding, the MEP National Network can provide on a national scale the services that the nation's small manufacturers need.