MEP • MANUFACTURING
EXTENSION PARTNERSHIP

ANNUAL REPORT 2020









Letter from the Director

2020 was a year of worldwide challenges and unexpected opportunities. I'm so pleased the MEP National Network™ was prepared to meet the challenges faced by U.S. manufacturers and help them respond to the resulting opportunities. With the $50 million authorized by the Coronavirus Aid, Relief, and Economic Security (CARES) Act, MEP Centers in all 50 states and Puerto Rico are helping manufacturers increase production of personal protective equipment (PPE), reach new suppliers and markets, recover from workforce and supply chain interruptions, and achieve greater resilience. These are the first emergency funding awards in the history of the MEP program, and NIST MEP issued them in record time. In addition, the Network continues to build capabilities and resiliency through the nearly $17 million in additional awards made to MEP Centers this year through MEP's Competitive Awards, Advanced Manufacturing Technology Services and Disaster Recovery Programs. This resilience will enable us to meet future challenges, whatever they may be.

When international supply chains collapsed, MEP again met the challenge by relaunching the MEP Supplier Scouting service, originally established in 2009. Because we already developed the scouting process, the Network mobilized quickly. U.S. manufacturers needed to rapidly increase production of PPE, ventilators, N95 masks, hand sanitizer and other supplies, and the Network quickly created supply chain portals, shared best practices and connected with local organizations.

With its 51 Centers, over 1,400 trusted advisors and experts at more than 385 MEP service locations, the MEP National Network is uniquely positioned and in touch with the needs of U.S. manufacturers. With everything changing so quickly this year, NIST MEP convened manufacturing roundtables to hear from manufacturers directly. This series, the National Conversations with Manufacturers, featured nearly 50 manufacturing leaders representing 27 U.S. states and diverse industries. The roundtable format provided an excellent forum for generating important conversations about the current challenges and opportunities for manufacturers. Findings from these conversations are helping inform future efforts including the new MEP Manufacturing Resilience service and new themes for our Competitive Awards Program.

Despite many challenges this year, I am delighted with work across the Network toward the goals of the MEP National Network 2017-2022 Strategic Plan. We have updated goals in the plan's second 18-month period and we have seen steady progress on some key measures. Looking ahead, the MEP Advisory Board has formed a working group to chart the next strategic plan for 2023-2028, moving the Network forward and supporting the future needs of U.S manufacturing.

The MEP program gives a high return on investment to taxpayers. A May 2020 study by Summit Consulting and the W.E. Upjohn Institute found that the MEP program generated a substantial economic and financial return of nearly 13.4:1 for the $140 million federal investment in fiscal year (FY) 2019. In FY 2020, MEP Center manufacturing clients nationwide reported that the assistance they received helped to create or retain 105,748 manufacturing jobs, generated $13 billion in new and retained sales and realized $2.7 billion in cost savings.

2020 has been a year for the history books — and one we'll never forget. I am so incredibly proud of all the Network's efforts to help manufacturers across the country this year. These are demanding, yet rewarding times and in every crisis there is opportunity. I am confident the MEP National Network will continue to play a vital role in the recovery of U.S. manufacturing.

Sincerely,

Carroll Thomas, MEP Director

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About the Manufacturing Extension Partnership

Since 1988, the Hollings Manufacturing Extension Partnership (MEP) has worked to strengthen and empower U.S. manufacturing. The MEP program was created in 1988 by the Omnibus Trade and Competitiveness Act to improve the competitiveness of U.S.-based manufacturing by making manufacturing technologies, processes and services more accessible to small and medium-sized manufacturers (SMMs) through MEP Centers in every state and Puerto Rico. The MEP Centers provide expertise to help manufacturers reduce costs, create new products, develop the next generation workforce, find new markets and achieve business success.

For over thirty years, the MEP program has focused on bridging the manufacturing productivity gap, identifying opportunities for growth and encouraging technology deployment. The 51 MEP Centers, located in each state and Puerto Rico, are an integral part of the MEP National Network, providing manufacturing clients with a wide array of fundamental services in manufacturing, business and process improvements. Today, the MEP National Network has over 1,400 trusted advisors and experts at more than 385 MEP service locations. The MEP Centers and their partners, including state governments, universities, community colleges, nonprofit entities, associations, and private consultants provide manufacturers with the services needed to reduce bottom-line expenses and grow top-line profits, both of which are necessary to thrive in the global marketplace.

The MEP National Network Mission:

To strengthen and empower U.S. manufacturers

MEP National Network Mission and Vision

MISSION:

Strengthen and empower U.S. manufacturers.

VISION:

We are the go-to resource for America's manufacturers ensuring U.S. manufacturing is resilient and leads the world in manufacturing innovation.

DRIVING FORCE:

We are driven to attain and uphold U.S. manufacturing preeminence which is essential to our nation's long-term economic strength and to protect our national security interests.

ROLE:

The MEP National Network focuses its expertise and knowledge as well as that of its partners (industry, educational institutions, state governments, NIST, and other federal research laboratories and agencies) on providing U.S. manufacturers with information and tools they need to improve productivity, assure consistent quality, accelerate the transfer of manufacturing technology, and infuse innovation into production processes and new products.

NIST MEP: Adapting and Excelling in 2020

The COVID-19 pandemic upended all aspects of normalcy around the world in 2020. In mid-March, the NIST campus closed and all NIST MEP staff began working remotely from home. Work-related travel, so important for NIST MEP staff working with Centers and stakeholders around the country, completely stopped. NIST MEP staff adapted to the changing situation, learning new technologies, adjusting to webinars and virtual conferences, and sometimes being joined in meetings by kids and pets. NIST MEP staff worked incredibly hard during this epically historic year to continue excelling, working closely with MEP Centers, delivering CARES Act funding in record time, and meeting the mission to strengthen and empower U.S manufacturers — even in the most trying circumstances.

MEP Program Budget and Impacts

The FY 2021 appropriation for the MEP program is $150 million, which represents an increase of $4 million over MEP's FY 2020 funding amount of $146 million. Similar to MEP's FY 2020 appropriated funds, nonfederal cost share requirements are waived for FY 2021 federal funding for MEP Centers. Centers receiving state funding that is conditioned upon a federal cost sharing requirement are exempted from the cost share requirement waiver.

Approximately $121 million of MEP's funding went directly to the MEP Centers in FY 2020, with the remaining funds used by NIST MEP for program operations. Additional funds are awarded competitively to Centers for direct support of the MEP National Network's engagements with manufacturing firms and for enhancing the Network's ability to deliver a greater range of services and in more efficient ways.

In 2020, MEP also received a $50 million supplemental appropriation under the CARES Act specifically to fund pandemic response and recovery activities. Of that funding amount, $49.1 million was provided directly to the Centers.

Fiscal Year 2020 Impact Statement

According to a third-party survey, in FY 2020, the MEP National Network interacted with more than 27,574 manufacturers. MEP Center clients from across the country reported that the assistance they received helped to create or retain 105,748 manufacturing jobs in FY 2020. MEP Center clients had $13 billion in new and retained sales and realized $2.7 billion in cost savings as manufacturers navigated numerous challenges due to the COVID-19 pandemic.

For every dollar of federal investment in FY 2020, the MEP National Network generated $19.60 in new sales growth and $33.70 in new client investment. During this same time, for every $1,381 of federal investment, the Network created or retained one manufacturing job. Since 1988, MEP has worked with 121,084 manufacturers, leading to $134.9 billion in new sales and $24.7 billion in cost savings, and it has helped create and retain 1,327,744 jobs.

Summit Consulting and W.E. Upjohn Institute Report

In May 2020, Summit Consulting and the W.E. Upjohn Institute released an updated study which found the MEP program generated a substantial economic and financial return of nearly 13.4:1 for the $140 million invested in the program in FY 2019 by the federal government.

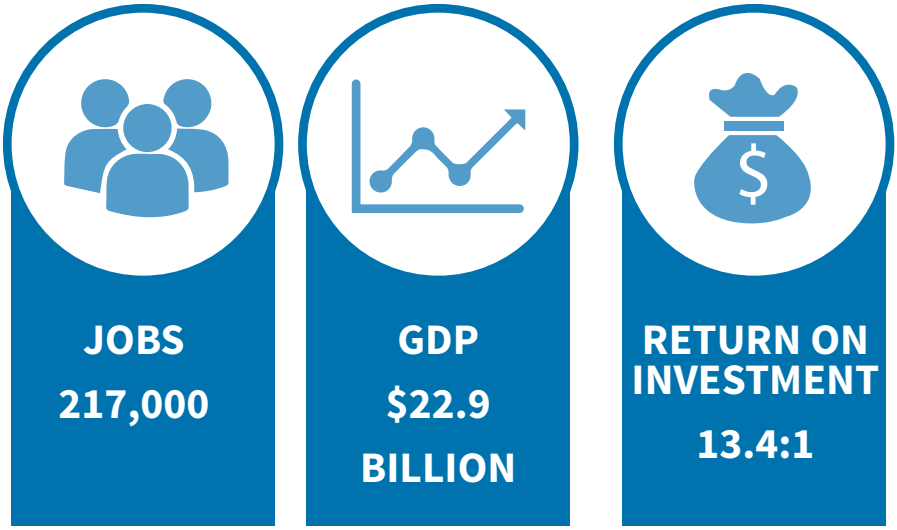
The study also found that total employment in the U.S. was over 217,000 higher because of MEP Center projects than without the program. The Upjohn study examined additional areas of economic impact not previously reported by the MEP program:

- Personal income is $14 billion higher.
- Gross domestic product is $22.9 billion larger, translating into an increase of $1.87 billion in personal income tax revenue to the federal government than without the MEP program.

An infographic is available and the study is available online.

About the Team

Summit is a quantitative and management consulting firm that works with public and commercial clients to turn data into actionable intelligence. The W.E. Upjohn Institute is a private, nonprofit, nonpartisan, independent research organization devoted to investigating the causes and effects of unemployment, to identifying feasible methods of insuring against unemployment, and to devising ways and means of alleviating the distress and hardship caused by unemployment.



MEP Advisory Board

About the MEP Advisory Board

The statutory purpose of the Board is to provide to the NIST Director:

- Advice on the activities, plans and policies of the MEP program
- Assessments of the soundness of the plans and strategies of the program
- Assessments of current performance against the plans of the program

The MEP Advisory Board consists of members broadly representing the interests and needs of the manufacturing sector appointed by the NIST Director. By statute, at least two members must be on an advisory board for an MEP Center and at least five other members must be from small U.S. businesses representing the manufacturing sector. The statute also requires that at least one Board member represent a community college. In addition, the law requires the Board to meet at least twice per year. In FY 2020, the Board met three times to perform its chartered functions. The current Board members represent the diversity of the U.S. manufacturing industry, from CEOs and executives at various-sized manufacturing companies to academic leaders at both state and community colleges. The important and varied perspectives of these volunteers will positively impact the MEP program into the future.

MATTHEW NEWMAN, CHAIR

Director, Business Development - Renewables
ONEOK, Inc.
Tulsa, Oklahoma

MARY ISBISTER, VICE CHAIR

President
GenMet Corporation
Mequon, Wisconsin

RAY AGUERREVERE

Joined the Board: October 2020
General Manager
Custom Metal Designs
Oakland, Florida

JOSE ANAYA

Dean, Community Advancement
El Camino Community College
Hawthorne, California

DONALD BOCKOVEN

Chief Executive Officer
Fiber Industries LLC
Darlington, South Carolina

E. LADON BYARS

President and Chief Executive Officer
Colonial Diversified Polymer Products, LLC
Dyersburg, Tennessee

BERNADINE HAWES

Second Term Expired: May 2020
Senior Research Analyst
Community Marketing Concepts
Philadelphia, Pennsylvania

KEVIN HELLER

Chief Operations Officer/Chief Financial Officer
The Ziegenfelder Company
Wheeling, West Virginia

MITCH MAGEE

Director, Global Advanced Manufacturing Team
PPG Aerospace
Sylmar, California

WILLIE MAY, PH.D.

Vice President for Research and Economic Development
Morgan State University
Baltimore, Maryland

PATRICIA MOULTON

President
Vermont Technical College
Randolph Center, Vermont

KATHAY RENNELS

Special Advisor to the Chancellor for Rural-Urban Initiatives
Colorado State University System
Fort Collins, Colorado

GEORGE SPOTTSWOOD

Owner and Chief Executive Officer
Quality Filters, Inc.
Robertsdale, Alabama

LESLIE TAITO

Chief of Staff
Neighborhood Health Plan of Rhode Island
Smithfield, Rhode Island

CHRIS WEISER

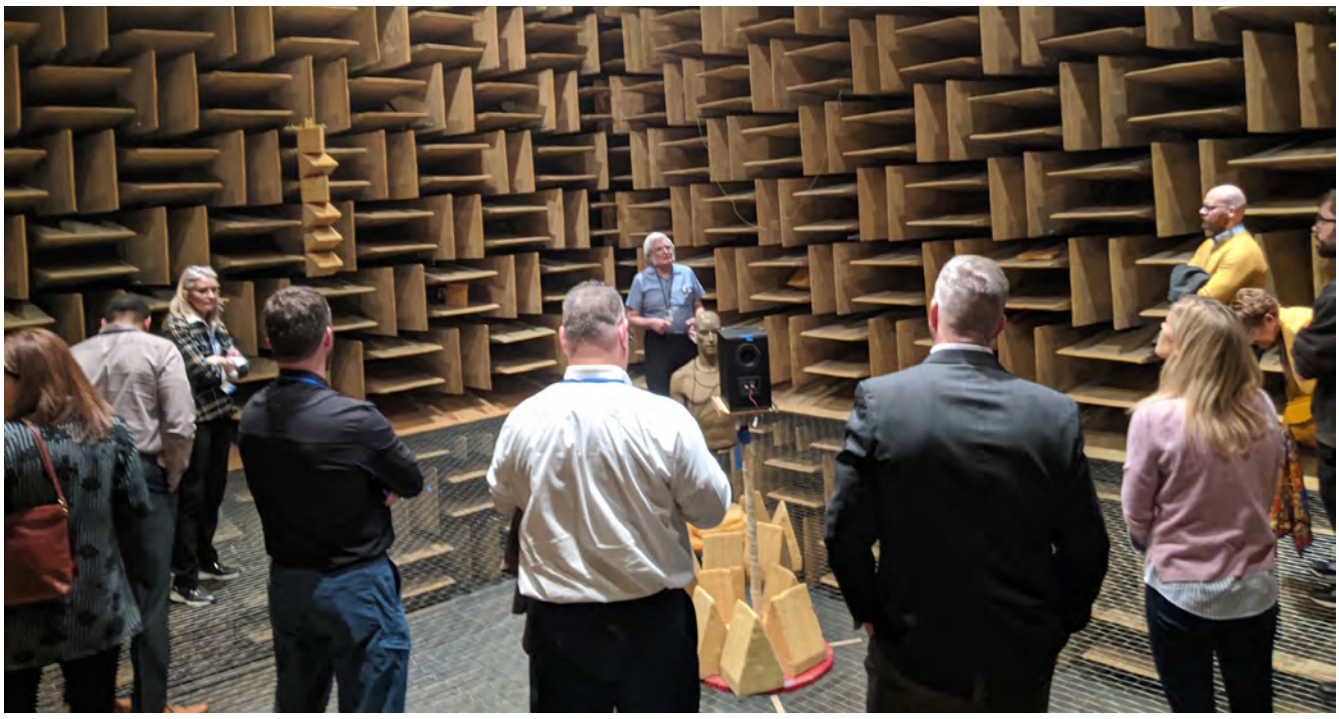
Resigned from the Board: November 2020
Owner and President
J.V. Manufacturing, Inc.
Springdale, Arkansas

JIM WRIGHT

Vice President of Operations
Proof Research
Columbia Falls, Montana

Meetings

The MEP Advisory Board held three meetings in 2020. Board members along with NIST, NIST MEP staff and representatives of the MEP National Network met in Gaithersburg, Maryland on March 3. Due to the pandemic, that was the only in-person meeting — the June 3 and Sept. 22 meetings were held virtually. At each meeting, the Board received detailed updates from NIST MEP leadership on programmatic operations and performance on the MEP National Network 2017-2022 Strategic Plan including progress toward meeting new 18-month goals. Each meeting also included high-level discussions of various topics integral to the program and report outs from the Board's working groups. These meetings provided opportunities for Board members to increase their knowledge of the latest trends in manufacturing, advise and support the MEP program, and actively engage with the MEP National Network. Detailed MEP Advisory Board meeting minutes are available on the NIST MEP website.



MEP Advisory Board members tour NIST's Acoustic Anechoic Chamber before March Board meeting.

Advisory Board Working Group Updates

Supply Chain Development Working Group

The MEP Advisory Board Supply Chain Development Working Group offers guidance and perspectives on the MEP National Network support and development of manufacturing supply chains with an emphasis on defense suppliers. The working group focuses attention on defense industrial base gaps and expertise on who should be brought into the discussion to provide insight on defense supplier gaps. In 2020 the Supply Chain Development Working Group included the following MEP Advisory Board members: Matt Newman, lead, LaDon Byars, Bernadine Hawes, Mary Isbister and Chris Weiser, as well as NIST MEP staff support.

Advisory Board Executive Committee Working Group

The Advisory Board Executive Committee Working Group offers guidance on future MEP Advisory Board leadership and membership recruitment, provides insights into cultivating strong Board governance as well as exploring ways to expand the MEP Advisory Board's role regarding the local MEP Center boards. The Center Board Outreach Program continued as a focus, as fostering strong connections between the MEP Advisory Board and the MEP Center boards remains a priority. This working group is also actively engaged in succession planning as many current Board members' terms expire in 2023. In 2020 the Executive Committee Working Group included the following MEP Advisory Board members: Bernadine Hawes and Matt Newman, co-leads, Mitch Magee, Pat Moulton and George Spottswood, as well as NIST MEP staff support.

Board Development Support Initiative

MEP's authorizing statute requires MEP Centers to establish boards to oversee the Center's operations. In June 2020, NIST MEP launched the Board Development Support Initiative to prepare Center boards to fully embrace their role, and understand requirements and best practices. This initiative offers board assessments, action planning and customized workshops on strategic planning, conflict resolution, advocacy and board governance.

MEP National Network Strategic Plan 2023-2028 Working Group

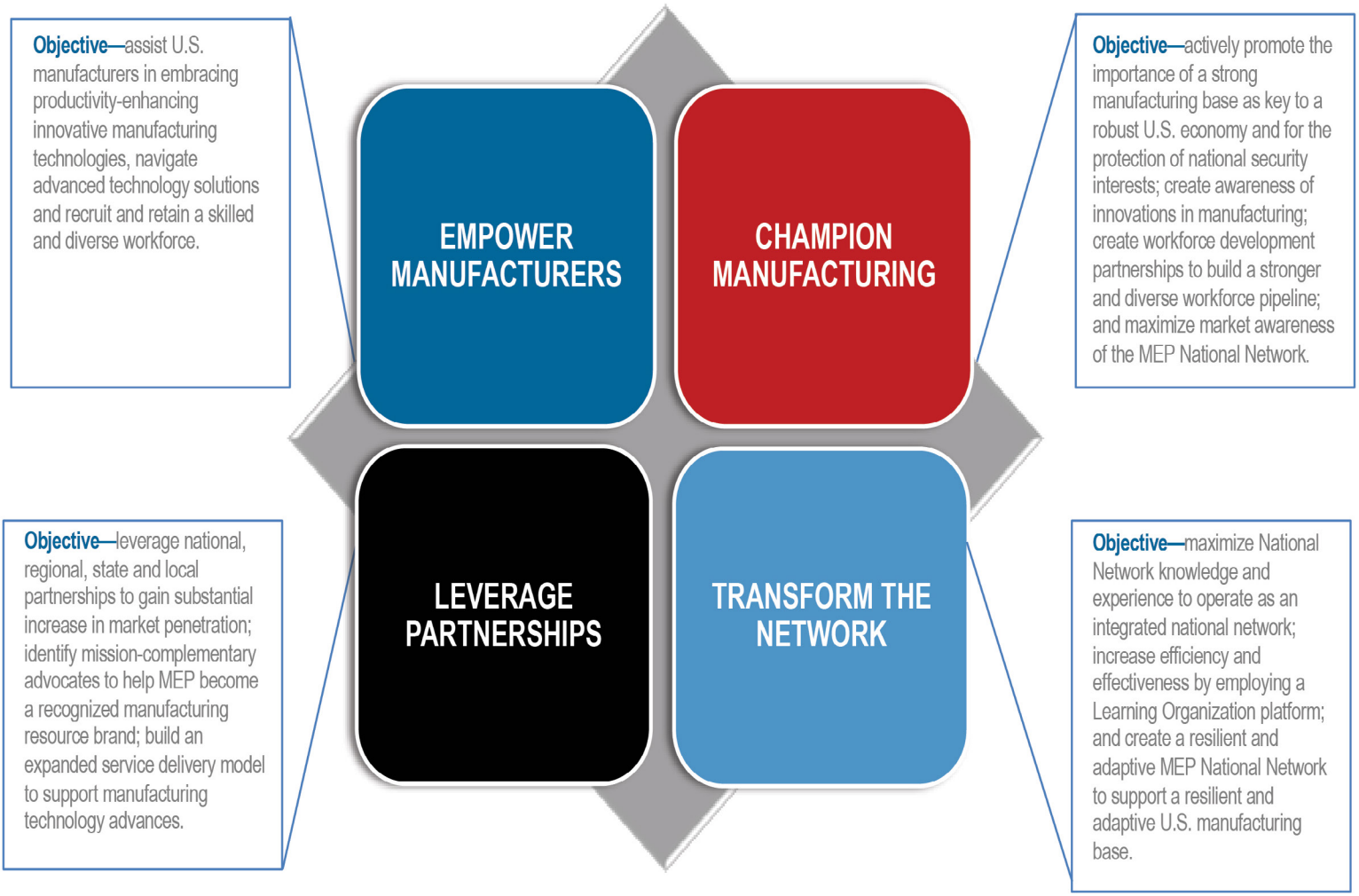
The newly formed MEP National Network Strategic Plan 2023-2028 Working Group will provide long-term program direction, guidance and perspectives for the MEP National Network Strategic Plan for 2023-2028. The working group will consider feedback from Centers, stakeholder partners, management and staff as the plan is developed. The MEP National Network Strategic Plan 2023-2028 Working Group currently includes the following MEP Advisory Board members: Kathay Rennels, lead, Don Bockoven, Kevin Heller, Mary Isbister, Willie May, Matt Newman, Chris Weiser, Jim Wright and ex officio support from Bernadine Hawes, as well as NIST MEP staff support.

Strategic Plan

The MEP National Network 2017-2022 Strategic Plan continues to serve as a critical North Star of the MEP National Network as it guides the Network forward from 2017-2022. Developed in conjunction with the Board, Center representatives, and NIST MEP staff, the plan creates a sharp focus for the Network with four expansive goals supporting the important mission and vision of the program. Throughout 2020, updates to the MEP Centers and the MEP Advisory Board detailed Network priorities along with measurable results outlining continuing progress. Download the full MEP National Network 2017-2022 Strategic Plan from the NIST MEP website.

Goals

The strategic plan's four principal goals include:



MEP National Network Entity Roles Mapped to Strategic Plan Goals

The MEP National Network consists of the 51 MEP Centers, NIST MEP, national MEP Advisory Board, each of the 51 MEP Center boards and the American Small Manufacturers Coalition/Foundation for Manufacturing Excellence.

EMPOWER MANUFACTURERS

Primary Responsibility

51 MEP Centers
Center Leadership Team

Collaborative Support

NIST MEP Extension Services

Important Support

NIST MEP:
- Leadership
- Regional & State Partnerships
- Network Learning & Strategic Competitions
- Marketing & Communications
- Program Evaluation & Economic Research
- Financial Management & Center Operations
- Administration
- IT Security & Support

CHAMPION MANUFACTURING

Primary Responsibility

51 MEP Centers
NIST MEP:
- Leadership
- Extension Services
- Marketing & Communications
- Regional & State Partnerships

MEP Advisory Board
MEP Center Boards
Foundation for Manufacturing Excellence
American Small Manufacturers Coalition

Collaborative Support

NIST MEP:
- Network Learning & Strategic Competitions
- Program Evaluation & Economic Research

Important Support

NIST MEP:
- Financial Management & Center Operations
- IT Security & Support
- Staff Resource Management

LEVERAGE PARTNERSHIPS

Primary Responsibility

51 MEP Centers
Center Leadership Team
NIST MEP:
- Leadership
- Extension Services
- Marketing & Communications
- Regional & State Partnerships

MEP Center Boards

Collaborative Support

MEP Advisory Board
Foundation for Manufacturing Excellence
American Small Manufacturers Coalition
NIST MEP Program Evaluation & Economic Research

Important Support

NIST MEP:
- Administration
- Financial Management & Center Operations
- IT Security & Support
- Staff Resource Management

TRANSFORM THE NETWORK

Primary Responsibility

51 MEP Centers
Center Leadership Team
NIST MEP (All)

Collaborative Support

MEP Advisory Board
MEP Center Boards
Foundation for Manufacturing Excellence
American Small Manufacturers Coalition

SUCCESS DEFINED IN SHORT, MID AND LONG-TERM GOALS

18-MONTH MEASURES OF SUCCESS (THROUGH MARCH 2021):

- Reach consensus across the MEP National Network on the definition of project and client manufacturing establishment interaction to ensure accurate and consistent measurement
- Achieve operational excellence by improving reporting via measurement of on-time and accurate reporting
- Increase reported projects by 10% and reported new clients by 5%
- Increase visibility by amplifying and measuring MEP National Network brand awareness by at least 10%

FIVE-YEAR VIVID DESCRIPTION:

As the go-to resource for U.S. manufacturers…

- Recognized by SMMs as a valuable and essential resource for delivering advanced technology solutions and cited by key manufacturing stakeholders (local, state, federal) as integral to growing U.S. manufacturing ecosystems
- Increased our market penetration as an integrated National Network by 20%
- Delivered integrated digitalization and cybersecurity assistance to dispersed supply chains and embraced Industry 4.0 in our own operational excellence

SIGNIFICANT LONG-TERM GOAL:

The MEP National Network is known and recognized by U.S. manufacturers and stakeholders as an indispensable resource whose trusted experts help them grow and embrace manufacturing technology advances. MEP's goals are a doubling of federal and state funding in the Network along with a strategic expansion of the current members of the MEP National Network:

- To be known and recognized by U.S. manufacturers as the go-to resource for manufacturing
- Triple the number of manufacturers served annually
- Increase the MEP National Network impact numbers four-fold

Progress Toward Goals

At each meeting, the MEP Advisory Board received detailed updates from the MEP Director on progress toward updated goals for the MEP National Network 2017-2022 Strategic Plan's second 18-month period which runs from September 2019 through March 2021. The September Board meeting included an update from NIST MEP leadership on how the goals were adjusted and quantified due to the disruption caused by the pandemic. Even with the disruptions of 2020, steady progress was seen. In addition, the Board began pulling together a working group to chart the next strategic plan, for 2023-2028.

MEP National Network Update: Meeting the Challenge of 2020

2020 was a year of unexpected challenges, but the MEP National Network was uniquely positioned to help manufacturers across the country survive and even thrive in the face of crisis. MEP Centers and their manufacturing clients demonstrated incredible resilience and innovation on a daily basis. All 51 MEP Centers in every state and Puerto Rico supported manufacturers in countless ways throughout this demanding and rewarding year.

MEP National Network™

$50 million in funds

authorized by the Coronavirus Aid, Relief, and Economic Security (CARES) Act awarded to MEP Centers to support a national manufacturing recovery from the crisis.

CARES Act Funding

2020 was a momentous year of challenge, growth and resiliency for the MEP National Network. With $50 million in funds authorized by the Coronavirus Aid, Relief, and Economic Security (CARES) Act, NIST issued emergency funding awards to MEP Centers in all 50 states and Puerto Rico for COVID-19-related projects. Due to the critical need for this funding, NIST made all the awards to the MEP Centers in record time. NIST submitted an implementation plan to the Department of Commerce (DOC) ten days after the CARES Act was signed on April 6, setting a stretch goal of issuing all awards within 90 days. The last award was issued on June 29, 94 days after passage of the CARES Act and 84 days after setting the 90-day goal with DOC. With these funds, Centers are helping manufacturers increase production of PPE, reach new suppliers and markets, recover from workforce and supply chain interruptions, and achieve greater resilience. The awards to the 51 MEP Centers range from $91,000 to $6.1 million and are enabling the Centers to support a national manufacturing recovery from the crisis.

Efforts Across the Network

The MEP National Network and its manufacturing clients are working with state and federal government to respond to the challenges and needs resulting from the pandemic. NIST MEP created a document that highlights what the 51 MEP Centers are doing to help U.S. manufacturers in key areas.

Connecting resources to needs

The MEP National Network works with industry organizations, federal, state and local governments and manufacturers to share critical information and connect resources to address urgent needs. From the beginning of the pandemic, each MEP Center has been continuously problem-solving — leveraging partnerships and know-how to meet local needs. The Network is linking manufacturers to hospitals and others with critical needs for PPE and medical supplies. MEP Centers are helping manufacturers map new supply chains, identify alternative materials and follow guidelines to maintain safe work environments. In addition, MEP Centers connect manufacturers to resources available through the Small Business Administration and at the state and local levels.

Working directly with state governments

The Network helps link state government policies and programs to manufacturers by participating in emergency task forces to address challenges and issues. MEP Centers are the connection between the manufacturing industry and state procurement efforts. They are managing state-level supply chain portals, linking manufacturers to demand and organizing them to deploy as needs change, while also connecting them with state resources.

Addressing specific issues with manufacturing PPE, medical supplies and medical devices

The MEP National Network is helping manufacturers meet the country's urgent needs for PPE and medical devices by guiding them to information and solutions about testing protocols, quality testing and required certifications. MEP Centers are helping address issues of potential legal liabilities arising from the production of PPE and medical supplies and devices.

Maintaining base operations and serving all manufacturers

Through the pandemic and the resulting economic crisis, the MEP National Network continues to fulfill its mission to strengthen and empower U.S. manufacturers in order to maintain the health of the U.S. manufacturing base as it faces an extraordinary emergency that will have long-lasting effects. MEP Centers are helping companies engage with customers in new and different ways. They are providing cybersecurity assistance — addressing new kinds of threats as employees work in new ways. The Network is helping manufacturers examine ways to use technologies to improve productivity, which will benefit them long into the future.

The first virtual MEP National Network Update Meeting took place on Sept. 23, the day after the third MEP Advisory Board meeting. It was originally scheduled to follow the Board meeting in Phoenix. The virtual format was a success, with over 400 registrants from across the country. A major theme of the Update Meeting was how to continue positioning the Network to provide key services that strengthen and empower U.S. manufacturers during the economic downturn. A series of videos shown during the Update Meeting featured MEP Center staff discussing how they met the many challenges of their manufacturing clients, including helping them pivot to PPE production. The full MEP National Network Update Meeting recording is available for review.

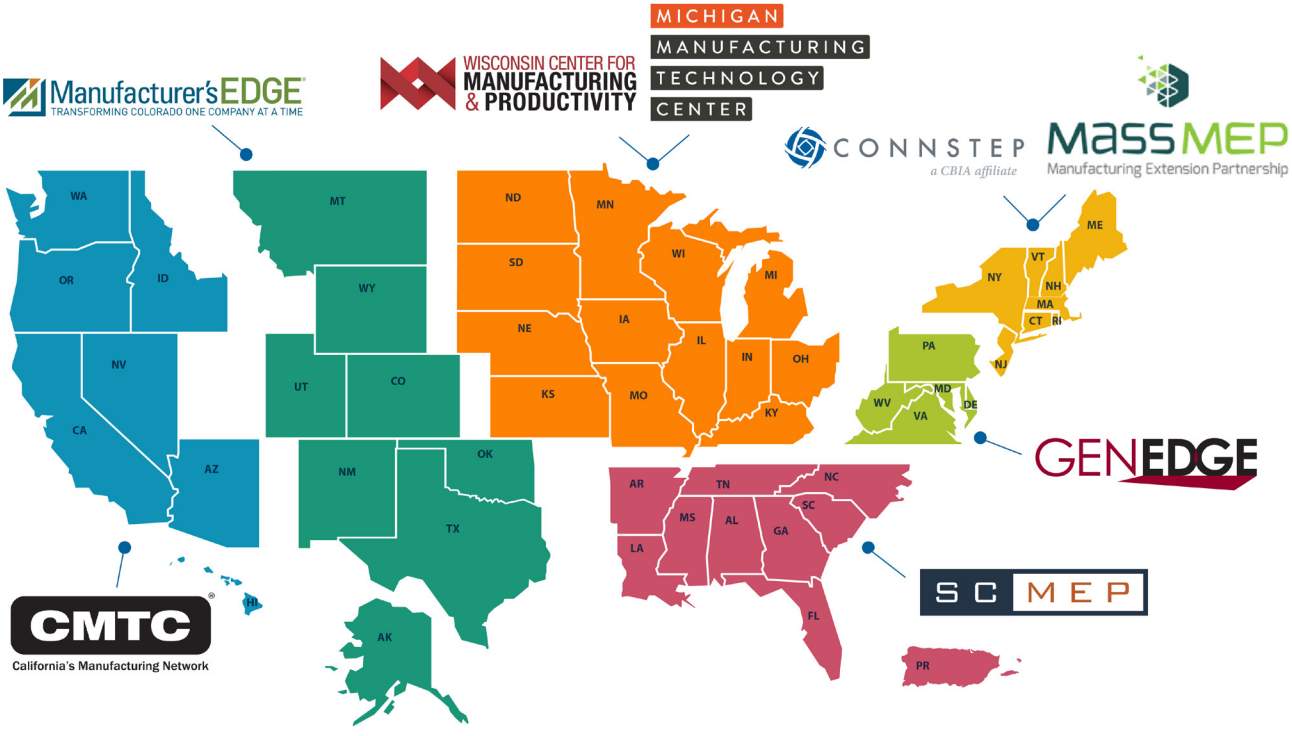
MEP National Network Supplier Scouting

In March 2020, NIST MEP relaunched its supplier scouting service, which originated in 2009. Having already developed the scouting process, the MEP National Network was quick to mobilize. MEP Supplier Scouting is a formal process that provides business opportunities to U.S. manufacturers and connects those that have relevant production capabilities. When U.S. manufacturers needed to rapidly increase production of PPE, ventilators, N95 masks, hand sanitizer and other supplies, the Network quickly created supply chain portals, shared best practices, and connected with local organizations. All 51 MEP Centers are participating and MEP Supplier Scouting is leveraging existing online collaboration platforms for MEP Centers to communicate about and respond to national and state needs and cybersecurity.

Center Leadership Team

Established in 2017, the MEP National Network Center Leadership Team (CLT) includes leaders from MEP Centers who interact with the NIST MEP leadership team to provide MEP Center strategies, identify funding opportunities, support the MEP National Network brand, validate multistate project processes, provide Center guidance and promote efforts for the Network to successfully serve more manufacturers. The CLT continued to convene virtually during 2020 to operationalize communication and collaboration norms. Their work on Network structure and governance continues. The CLT created regional communication nodes as more efficient and effective ways of connecting Centers around the country to build relationships, provide support, exchange ideas and information, catalyze learning, and improve communications. This structure improves access directly to CLT members and ensures that everyone in the Network has a voice. Better connections form the basis for a faster and more flexible National Network.

Center Leadership Team
Regional Communication Nodes



National Conversations with Manufacturers Series

Between late July and early October, NIST MEP hosted a series of 11 virtual roundtables, the National Conversations with Manufacturers, highlighting the experiences of manufacturing leaders across the country. NIST MEP heard from nearly 50 manufacturers representing 27 U.S. states and diverse industries such as aerospace, food, electronics, sheet metal, apparel, and plastics. Discussions centered on what keeps them up at night, how they are operating during the pandemic, what they see in the future, and what the MEP National Network can do to help U.S. manufacturers. The roundtable format provided an excellent forum for generating these important conversations and resulted in a great deal of insight into the current challenges and opportunities for manufacturers. NIST MEP published a series of blogs about the conversations on the NIST MEP website. In addition, NIST MEP is analyzing these sessions for a final report including actionable findings.

2020 MEP National Network Highlights

Advanced Manufacturing Technology Services/Industry 4.0

NIST MEP is providing approximately $8 million total funding for projects that support Advanced Manufacturing Technology Services/Industry 4.0 including any technologies that enable digitally connected, smart manufacturing systems within factories and across manufacturing supply chains. The MEP National Network is also providing manufacturers with the resources and services needed to reach end-to-end digitization of all physical assets and integration into digital ecosystems.

In 2020, Oregon MEP's Industry 4.0 Technology Acceleration Program (ITAP) concluded with development of a microsite for MEP Centers to serve as a repository of advanced manufacturing technology information. The site is used to share and rate experiences with vendors, products and services on a national scale. In addition to funding five Advanced Manufacturing Technology Service awards in 2020, three additional Competitive Awards Program (CAP) projects focused on providing Industry 4.0 solutions. In addition to Oregon MEP's follow-up to the ITAP project, they emphasize cloud computing, collaborative robots and Department of Defense (DOD) cybersecurity compliance. Ohio MEP is helping manufacturers determine their digital maturity and FloridaMakes (the Florida MEP Center) is integrating Industry 4.0 into the Baldrige Framework, a leadership and performance management framework that empowers organizations to accomplish their mission, improve results and become more competitive.

Cybersecurity for Manufacturing

During 2020, the MEP National Network continued to develop the capabilities and capacities of MEP Centers to provide cybersecurity assistance to SMMs on a national scale. While not every MEP Center is fully proficient in cybersecurity, MEP Centers' cybersecurity knowledge and experience nationwide continues to grow. Every Center can provide cybersecurity awareness and technical assistance to SMMs, either directly using internal staff, through relationships with third parties, or through engagement with MEP National Network partnerships.

To build the National Network's overall cybersecurity capabilities, CAP grants were awarded in September 2020 to Michigan Manufacturing Technology Center, California Manufacturing Technology Consulting and GENEDGE (the Michigan, California, and Virginia MEP Centers, respectively). These three nearly identical grants separate the nation into three regions and nine areas, identify go-to Centers for cybersecurity assistance, and promote education, awareness, coordination and collaboration by Centers in each region.

MEP cybersecurity for manufacturing work continues to be spurred by the defense manufacturing sector. Throughout the nation, MEP Centers are helping small defense contractors understand and implement the cybersecurity protections they must have in place as required by the Defense Federal Acquisition Regulations Supplement (DFARS), including the Cybersecurity Maturity Model Certification (CMMC) program announced in 2019 and formalized in an interim DFARS in late 2020. A three-year CAP award was granted in September 2020 to Georgia MEP to develop training for Centers on CMMC. Additionally, MEP Centers continued to participate in grants made by the Office of Local Defense Community Cooperation (OLDCC) Industry Resilience program relating to cybersecurity, with an ongoing emphasis on workforce education and training.

Throughout 2020, the MEP National Network continued a partnership with the Office of the Secretary of Defense (OSD) that leverages several dozen MEP Centers around the country to provide cybersecurity awareness and technical assistance to small defense manufacturing companies who are required to protect the controlled unclassified information included in their defense contracts. This work, begun in 2019, is targeting the provision of cybersecurity awareness and assistance by MEP Centers to over 1,000 small defense manufacturers throughout the nation by June 2021. This MEP partnership with OSD also includes an active partnership with the NIST laboratories to develop and pilot implementation guidance associated with the NIST Cybersecurity Framework manufacturing profile. This work specifically targets the implementation of cybersecurity protections for the operational technology aspects of manufacturing environments.

In addition to supporting the defense supply chain, in 2020, the MEP National Network began expanding Center capabilities to integrate cybersecurity concepts into other related projects. Centers began identifying ways to ensure projects that require the purchasing of equipment or modification of a network do not negatively impact a clients' current cybersecurity profile. Because cybersecurity is a pillar of Industry 4.0, many Centers have fostered relationships between their cybersecurity and Industry 4.0 experts to seamlessly integrate cybersecurity offerings into Industry 4.0-related services.

The MEP National Network Cybersecurity Working Group continued in 2020 to be a primary platform for information and best practice sharing. Due to social distancing requirements, the working group moved to virtual meetings where MEP Centers and guest speakers were able to engage. The working group addresses topics of high interest to MEP Centers, which during 2020 included the MEP role relating to the CMMC program and Center progress on OLDCC grants.

In addition, the MEP National Network continued to provide many basic tools and tips for U.S. manufacturers relating to cybersecurity through blogs, webinars and training materials made available on the NIST MEP website, the NIST Small Business Cybersecurity Corner website and the websites of individual MEP Centers.

Defense Manufacturing Supply Chain Support

The MEP National Network has a long and strong base of experience providing technical assistance to the U.S. defense industrial base (DIB) with an emphasis on addressing the needs of small manufacturers who either work in the DIB or are interested in doing so. The MEP National Network continues to operate partnerships with DOD agencies at the national level via NIST MEP and at the state and local levels via MEP Centers. MEP Centers continue to be very active in providing hands-on technical assistance to defense manufacturing suppliers across a wide array of areas including:

- Assisting with cybersecurity efforts for defense manufacturing suppliers
- Collaborating with DOD-sponsored Manufacturing USA institutes to assist small defense suppliers in leveraging advanced technologies and capitalizing on market opportunities associated with the various institutes
- Working with DOD agencies and suppliers to integrate new technologies, best practices and manufacturing approaches into supplier production operations

In 2020, the MEP National Network continued to support defense manufacturing supply chains relating to cybersecurity awareness and assistance for small defense manufacturers, with an emphasis on requirements associated with both DFARS, as well as the emerging CMMC program. Notable cybersecurity partnerships included the Office of the Undersecretary of Defense for Research and Acquisition, the DOD OLDCC, and DOD Procurement Technical Assistance Centers around the nation. In addition, the Network continued working with DOD-sponsored Manufacturing USA institutes and also interacting with the U.S. Navy in regional and local innovation ecosystems. Going forward, the MEP program anticipates the continuation of a very active role relating to multiple facets of supply chain development for the DIB.

Embedding MEP in Manufacturing USA Institutes

2020 brought the conclusion of a series of special project awards made by NIST MEP to the MEP National Network to embed MEP Center staff at each of the Manufacturing USA institutes around the U.S. These efforts focused on how to engage small manufacturers with advanced manufacturing technologies and markets associated with the Manufacturing USA institutes, and sharing that learning across the MEP National Network. The pilot projects funded through these special awards resulted in significant learning for both the MEP National Network and the Manufacturing USA institutes. For the MEP National Network, the projects identified processes and mechanisms that enable MEP Centers to engage SMMs about advanced manufacturing technologies and markets associated with specific technologies and technical focus areas. This work provided a strong foundation for and directly contributed to the MEP National Network efforts that are underway relating to Advanced Manufacturing Technology Services/Industry 4.0. It is anticipated that MEP Centers will continue to engage and collaborate with Manufacturing USA institutes going forward.

Food Industry Services and Food Safety

To better protect public health by strengthening the food safety system, the U.S. Food and Drug Administration (FDA) introduced the Food Safety Modernization Act (FSMA) in 2011. To further enhance food safety and traceability, in 2019 FDA launched the New Era of Smarter Food Safety initiative that encourages the incorporation of technology and a focus on preventing problems through:

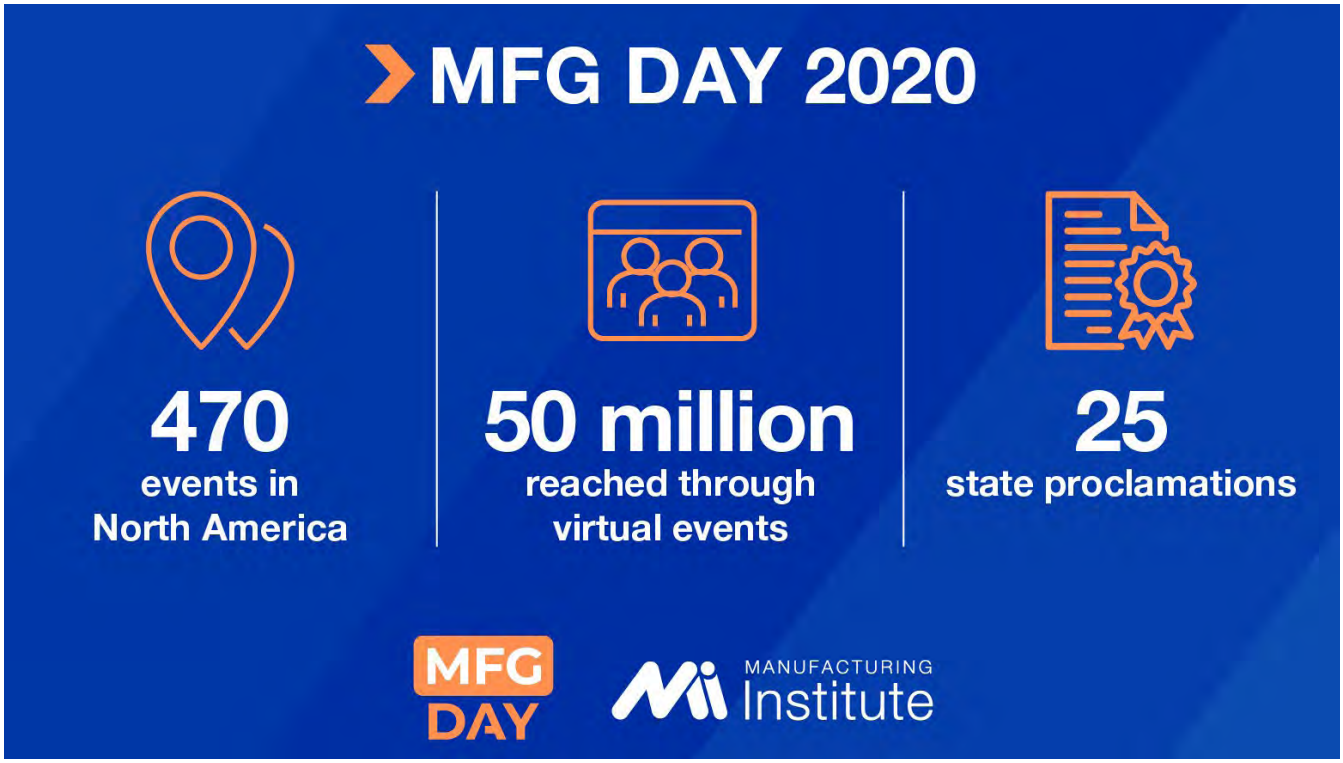
- Technology-enabled traceability and foodborne outbreak response
- Smarter tools and approaches for prevention
- Adapting to new business models and retail food safety modernization
- Food safety culture

Two MEP partnerships with the FDA and Food Safety Preventive Controls Alliance enhance outreach and dissemination of safe food manufacturing practices, training and information to small and medium-sized manufacturers (SMMs) in the U.S. through the MEP National Network. The Network provides assistance to SMMs implementing FSMA, a culture of food safety, and technology focused on preventing problems.

Representatives from all MEP Centers, along with various partners involved with food and beverage manufacturing, participate in the MEP National Network Food Industry Services Working Group where they share best practices, challenges and solutions. The working group enables MEP Center staff to learn about other MEP services that may help food manufacturing clients — including cybersecurity and the MEP-Assisted Technology and Technical Resource (MATTR) service. Subject matter experts from FDA, NIST and other organizations also disseminate food industry-related technical information at working group meetings.

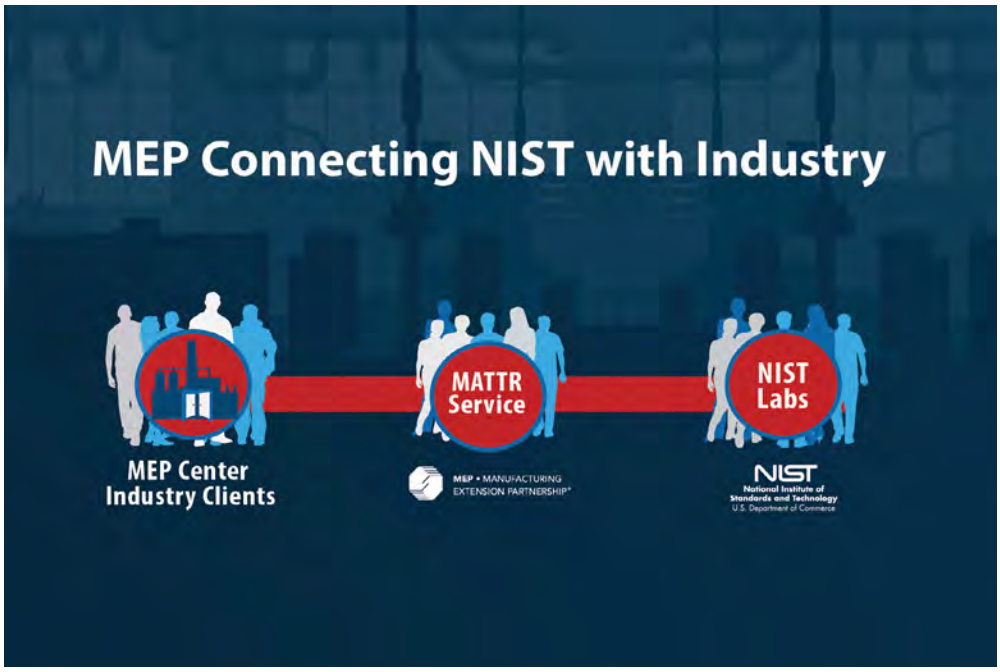
The food and beverage industry is the third largest contributor to the overall U.S. manufacturing gross domestic product. Over three-quarters of the 27,000 U.S. food manufacturers have fewer than 100 employees and the food manufacturing market presents a tremendous growth opportunity for the MEP National Network.

On Feb. 26, 2020, 21 NIST MEP staff members took a field trip from NIST Gaithersburg to visit Maryland MEP client Tulkoff Food Products, Inc., in Baltimore, Maryland. The family-owned business is best known for horseradish-based condiments sold to food service, industrial and retail customers nationwide. It was a tremendous learning opportunity for NIST MEP staff to see firsthand how services from MEP Centers provide value to U.S. manufacturers.



Manufacturing Day 2020

Manufacturing Day (MFG Day) looked a little different in 2020. There may not have been hundreds of SMMs opening their doors to student visitors and in-person, expert-led presentations on leading best practices and technologies, but we did have — virtual platforms! The MEP National Network stepped up to the new contact-free environment to celebrate American manufacturing and shine a spotlight on manufacturing as the next big career path. MFG Day, held on the first Friday in October each year, kicked off at the national level with the official presidential proclamation on National Manufacturing Day 2020 issued by the White House. NIST Director Walt Copan spoke virtually at the official MFG Day event, along with other special guests and speakers. MEP Director Carroll Thomas honored MFG Day by introducing the final roundtable in the National Conversations with Manufacturers, a series of virtual discussions featuring 50 manufacturers from 27 states representing diverse industries talking about their experiences and challenges during the pandemic. MEP Centers across the Network held local MFG Day events and activities throughout October. These included virtual factory tours and online programming that allowed high school and college students, teachers and guidance counselors to ask manufacturers what it's like to work in industry. Participants also learned about opportunities to get the training and education needed for careers in manufacturing, and participated in webinars on emerging topics like Industry 4.0 and automation. One MEP Center even developed their own manufacturing trading cards!



MEP-Assisted Technology and Technical Resource (MATTR)

The MEP-Assisted Technology and Technical Resource (MATTR) service facilitates the connection of the technical needs of MEP Center manufacturing clients with the technology and expertise of the NIST laboratories. The MATTR service connects SMMs to the amazing resources NIST has to offer including:

- World-class expertise and experience
- Unique, highly capitalized and often best-in-the-world facilities
- Leading-edge research programs
- Technical know-how that can help SMMs improve, innovate, and create products and services

In 2020, MATTR developed into an effective operational technical assistance service for the MEP National Network and has facilitated nearly 90 instances of connecting MEP Center manufacturing clients with NIST labs since 2017. Almost half of MEP Centers have participated in the MATTR service with interactions ranging from brief discussions with a NIST researcher concerning a manufacturers' technical issues to more extensive and ongoing activities. NIST MEP makes funding available to NIST laboratories to cover expenses related to their work with MEP manufacturing clients.

Two Cooperative Research and Development Agreements (CRADAs) between NIST and small manufacturers were established in 2020. CRADAs can be mutually beneficial to SMMs and the NIST labs when MEP Center client needs are well-aligned with active NIST lab research, usually relating to metrology and standards. MATTR helps SMMs negotiate through the process of partnering with the NIST labs, including facilitating assistance from the NIST Technology Partnerships Office.

NIST's Materials Measurement Laboratory is working with a client of INNOVATE Hawaii (the Hawaii MEP Center) through a CRADA. This small photonics company is developing an innovative confocal microscope that must be properly characterized and optimized using ultrafast lasers such as those at NIST. The second

agreement involves a client of California Manufacturing Technology Consulting (the California MEP Center) that has a novel medical device that is being specially calibrated using the expertise and equipment in NIST's Physical Measurement Laboratory.

In addition to the larger-scale CRADAs, in 2020 NIST labs solved MEP manufacturing client challenges in areas such as:

- Quality and measurement practices, including calibrations or special measurement and testing services
- Adopting and integrating new developments to existing technologies such as robotics, additive manufacturing, and other advanced manufacturing technologies and practices
- Understanding entirely new approaches to manufacturing, such as those enabled by the digital thread in Advanced Manufacturing Technology Services/Industry 4.0
- Leveraging and implementing industry standards and best practices relevant to process technologies and materials
- Licensing NIST-developed technologies for manufacturing applications

MEP National Network Brand Awareness Campaign

The MEP National Network continues its efforts to be recognized by SMMs and stakeholders as the go-to resource whose trusted experts help strengthen and empower U.S. manufacturers. The brand awareness campaign is one approach the MEP National Network uses to achieve its long-term growth goal.

This year the MEP National Network brand awareness campaign featured content contributions from 25 MEP Centers and subrecipients. MEP National Network practitioners delivered educational webinars and articles that addressed challenges SMMs face in areas such as advanced manufacturing technologies, cybersecurity, continuous improvement, workforce, business growth and issues specific to food manufacturers. Articles and webinars appeared in IndustryWeek, Quality Digest, Food Safety Magazine, Food Processing Magazine, Modern Machine Shop, and AME Target Online. This effort will continue through sharing educational and informational content created by the MEP National Network to increase Network awareness and establish our MEP Centers as thought leaders.

NIST MEP amplifies MEP National Network content on social media as part of our efforts to increase awareness of the Network. In addition, in 2020, NIST MEP developed and posted the highly praised Women in Manufacturing video, featuring women who are changing the stereotypes and face of manufacturing, from leadership in the front office to machine operators on the shop floor.

MEP Program Performance Evaluations

Panel Reviews

One of the most important changes to the MEP program resulting from passage of the American Innovation and Competitiveness Act (AICA) is the requirement that NIST MEP conduct third- and eighth-year performance evaluations — known as panel reviews — of the MEP Centers. Panel reviews are expected to:

- Provide analysis, diagnosis and feedback to Centers regarding their strengths and opportunities for improvement, and identify any deficiency areas
- Include an evaluation of a Center's own performance and evaluation management system's effectiveness and self-assessment
- Promote information sharing across the National Network
- Emphasize the linkage between best practices and demonstrated Center and client performance
- Identify common performance gaps so Centers can leverage internal and external resources to develop performance improvement practices

Under NIST MEP guidelines, each panel is composed of three peer MEP Center Directors and a member of NIST MEP who serves as the Panel Chair. A Center performance and profile report is prepared by the Center in advance of the panel review. This report provides a summary of the Center's organizational framework, performance against the NIST MEP IMPACT metrics, and a self-study overview of the Center's unique characteristics. Regular reviews and Center documents provide the panel with more information. As part of the panel review, the Center makes a presentation and the panel asks questions to assess the Center's overall performance. A panel summary report is then issued highlighting the Center's strengths and opportunities for performance improvement. The MEP Director makes final recommendations, with the Center either receiving a positive evaluation or potential probation. The panel summary report is one of many inputs into the MEP Center's fifth-year secretarial review and the issuance of another five-year cooperative agreement.

Over the past few years, NIST MEP has conducted performance evaluations for 43 of the 51 MEP Centers during the third year of their cooperative agreement following the recompetition. These include: Alabama, Arkansas, California, Colorado, Connecticut, Delaware, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Puerto Rico, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin and Wyoming. During FY 2020, eighth-year performance evaluations were conducted for three MEP Centers: Kentucky, Rhode Island and South Dakota.

Secretarial Reviews

The AICA also requires an evaluation of each Center as it approaches the halfway mark of its 10-year cooperative agreement. Referred to as secretarial reviews, these fifth-year performance assessments are delegated to the MEP Director and involve a thorough review of a set of performance-related documents similar to those used for third- and eighth-year panel reviews. A positive outcome affirms the Center's eligibility to continue receiving federal financial assistance from NIST for the remaining five years of the cooperative agreement. Centers that are determined to have unacceptable performance are placed on a 12-month probation.

Twenty MEP Centers underwent secretarial reviews in 2020 and each of these Centers received positive evaluations: Colorado, Connecticut, Florida, Idaho, Illinois, Indiana, Michigan, Minnesota, New Hampshire, New Jersey, New York, North Carolina, Oklahoma, Oregon, Tennessee, Texas, Virginia, Washington, West Virginia and Wisconsin.

NIST MEP Special Awards Programs

NIST MEP Competitive Awards Program

In 2017, NIST MEP launched the performance-based Competitive Awards Program (CAP) as part of ongoing efforts to build the MEP National Network and to make the program more effective and efficient. The statutory authority for the NIST MEP CAP defines the competition's priorities:

- Improve the competitiveness of industries in the region in which the Center or Centers are located
- Create jobs or train newly hired employees
- Promote the transfer and commercialization of research and technology from institutions of higher education, national laboratories, or other federally funded research programs and nonprofit research institutes
- Recruit a diverse manufacturing workforce, including through outreach to underrepresented populations

This funding opportunity is available for MEP Centers to add capabilities to the MEP National Network including projects that solve new or emerging manufacturing problems that are not already provided for under a Center's base MEP award.

In 2020, 12 additional CAP awards were made totaling about $11 million and issued to MEP Centers in California, Connecticut, Florida, Georgia, Michigan, Missouri, New York, Ohio, Oregon, Tennessee and Virginia (two awards). Project themes include new manufacturing technologies of relevance to SMMs, particularly those related to cybersecurity, Industry/Manufacturing 4.0, supply chain management technologies and practices, and workforce intermediary and business services. Each of these awards will increase the ability to effectively serve MEP clients across the whole Network. The following MEP Centers received CAP awards in 2020:

- **California Manufacturing Technology Consulting,** Torrance, California
- **CONNSTEP,** Hartford, Connecticut
- **FloridaMakes,** Orlando, Florida
- **GENEDGE Alliance,** Martinsville, Virginia (two 2020 CAP awards)
- **Georgia MEP,** Atlanta, Georgia
- **Michigan Manufacturing Technology Center,** Detroit, Michigan
- **Missouri Enterprise,** Rolla, Missouri
- **New York MEP,** Albany, New York
- **Ohio MEP,** Columbus, Ohio
- **Oregon MEP,** Portland, Oregon
- **University of Tennessee Center for Industrial Services,** Nashville, Tennessee

To date, NIST MEP has funded 39 awards totaling over $35 million in federal funding with project durations of 2-3 years. In addition, the projects are engaging and providing manufacturing practice development funding to MEP Center partners around the country.

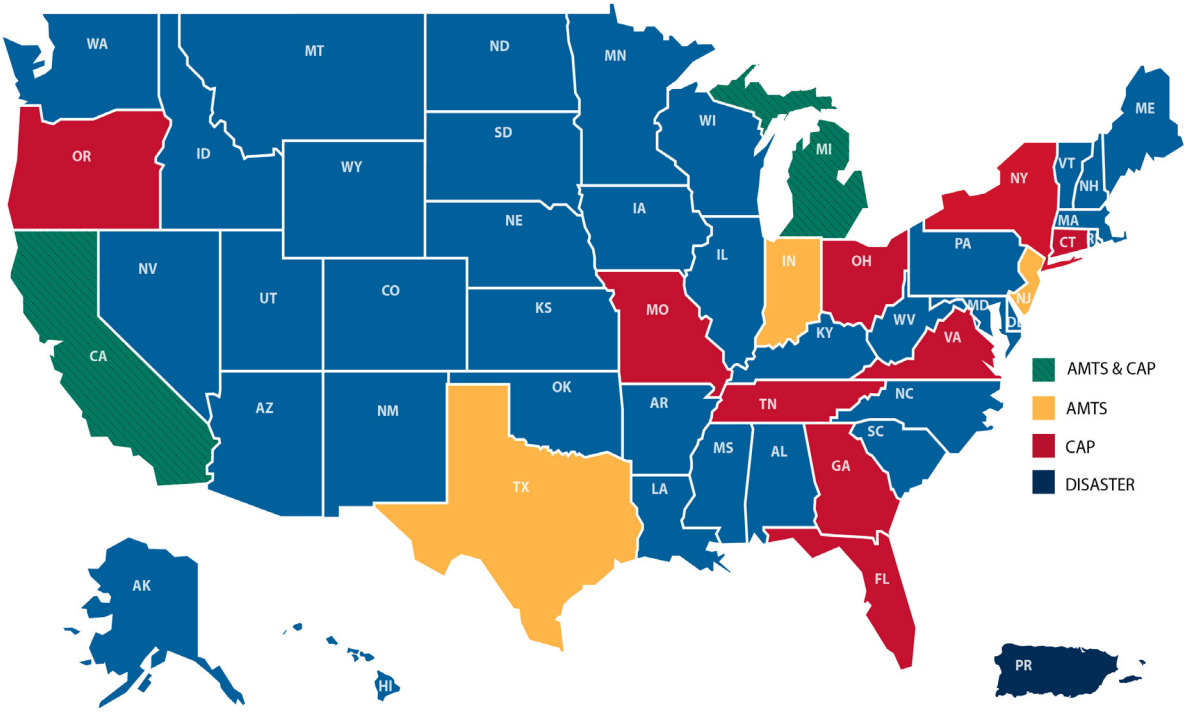
At the Sept. 22 Board meeting, Board members discussed and contributed ideas for possible future themes for NIST MEP's Competitive Awards Program.

Advanced Manufacturing Technology Services Awards

MEP made $5 million in additional awards to five MEP Centers in California, Indiana, Michigan, New Jersey and Texas through the 2020 NIST MEP Advanced Manufacturing Technology Services Notice of Funding Opportunity. These awards are to deploy Advanced Manufacturing Technology Services to U.S. manufacturers in the broad area of Industry/Manufacturing 4.0, with an emphasis on serving the technology-based needs of small U.S. manufacturers. These projects should lead to improved product quality and innovation, improved manufacturing process efficiency and increased supply chain connectivity. Ultimately, this should result in small U.S. manufacturers being more competitive in the marketplace and being afforded business growth opportunities. The following MEP Centers received Advanced Manufacturing Technology Services Awards in 2020:

- **California Manufacturing Technology Consulting,** Torrance, California
- **Michigan Manufacturing Technology Center,** Detroit, Michigan
- **New Jersey MEP,** Cedar Knolls, New Jersey
- **Purdue University, Indiana MEP,** West Lafayette, Indiana
- **University of Texas in Arlington, dba TMAC,** Arlington, Texas

2020 Special Awards



NIST Manufacturing Disaster Assessment Program

The NIST Manufacturing Disaster Assessment Program invites applications from MEP Centers to perform assessments of SMMs in areas subject to a Federal Emergency Management Agency disaster declaration. In 2020, NIST MEP provided nearly $1 million to Puerto Rico Manufacturing Extension Inc. (the Puerto Rico MEP Center) for their Disaster Recovery Program for the Southwest Region in response to two earthquakes that hit the island in January 2020.

Policy Academy

The Policy Academy is a yearlong program that helps spur creative action to strengthen the competitiveness of the manufacturing sector, its firms and their workers. Teams from individual states work to identify issues and opportunities requiring attention in their state and propose approaches, including policies, practices and initiatives, for further investigation and possible investment. The Policy Academy is funded by NIST MEP and led by SSTI and the Center for Regional Economic Competitiveness. Teams of policymakers and industry representatives met in person for the first time in August 2018 and quickly formed a community of practice based on a shared understanding of the challenges that manufacturers in their states faced.

Teams from Kentucky, New Jersey, Puerto Rico and Utah worked from 2018 to 2019 in the program's first cohort. In 2020, a second cohort of eight states (Arizona, Colorado, Illinois, Maryland, Missouri, North Carolina, Pennsylvania and Wisconsin) followed. Both groups focused on the theme Strengthening Your State's Manufacturers. Over the course of the yearlong Policy Academy, the teams worked with a broad group of stakeholders in their state to develop a unique action plan aimed at addressing challenges and capturing new opportunities. The state team leads met regularly with each other getting just-in-time technical assistance from experts and sharing ideas for new approaches to working with manufacturers.

The states differ in the composition of their manufacturing sector and the groups involved in assisting manufacturers, but common approaches arose among the states, including:

Surveying manufacturers to identify industry awareness and needs. Several states undertook surveys of manufacturers to help identify the issues that were most pressing to them and determine what level of awareness the manufacturers had of available resources.

Encouraging better connections between companies and the resources available to them. Some approaches included developing an inventory of the support and resources available to companies, providing that information in a centralized, easily accessible website, and cross-training opportunities between manufacturing support organizations.

Coordinating responses among service providers as the pandemic hit. With the pandemic declared a national emergency at about the halfway point of the yearlong process, state teams quickly adjusted their activities to respond to manufacturers' needs in a coordinated fashion.

Tab Wilkins Emerging MEP Leaders

In April 2020, NIST MEP hosted the new cohort of 20 individuals in the Tab Wilkins Emerging MEP Leaders program via a virtual platform. Representing 16 MEP Centers, the new cohort brought diversity, talent and readiness to contribute to the success of the MEP National Network. In addition, the program graduated six members of the 1.12 cohort who represent six MEP Centers and completed the program despite the challenges of the pandemic. This yearlong program focuses on Network resources, processes and networking while teaching participants to effectively manage a Center.

Toyota Kata is about:

Developing new habits and allowing people to think differently about problems and goals

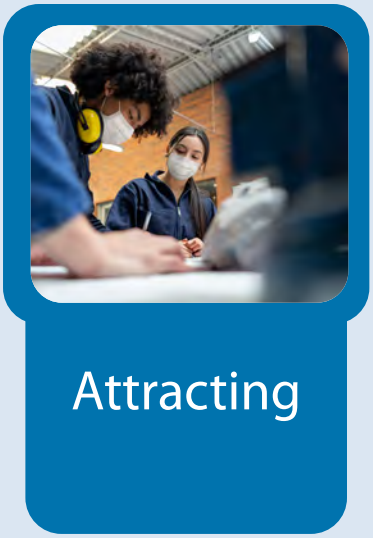
A way of working and of working together

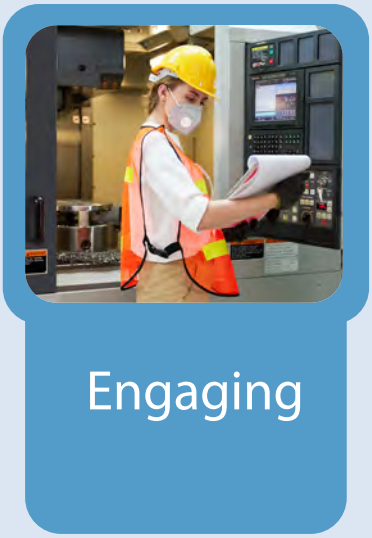
Using scientific thinking as an ingredient to make teams and organizations more effective and successful

Developing a culture of continuous learning and improvement at all levels through deliberate practice

Toyota Kata

As of the end of 2020, over half of the MEP Centers have integrated Toyota Kata into their suite of services. Moving forward, the MEP Kata in a Box training, coaching and mentoring program is being shared across the Network to strengthen MEP Center Toyota Kata coaches supporting U.S. manufacturers. MEP Centers and manufacturers are using Toyota Kata to develop creative, scientific-thinking skills. Manufacturing employees can use these skills to keep improving, adapting and generating a competitive advantage in a strategically aligned way.





Workforce: Developing Talent for Tomorrow's Workplace

MEP Centers are continually working with smaller manufacturers to help them identify new opportunities to grow their workforce and talent. MEP Center clients frequently cite employee recruitment and retention as one of their most frequent challenges, second only to cost reduction. As innovation and the use of technology in the workplace increases, the demand for skilled workers has also increased. MEP Centers are engaged in a wide variety of activities to help SMMs connect to resources and develop skilled workers. Essential components of these efforts include:

- Identifying training opportunities and skill certifications
- Talent planning for growth and development of the future talent pipeline
- Assisting companies with work-based learning, mentorships, internships and apprenticeships
- Leadership coaching and development, organizational culture and employee engagement

Apprenticeships are a valuable initiative to develop existing and new employees, and MEP Centers are instrumental in connecting manufacturers to the local and state resources that can provide apprenticeship programming. Many Centers are helping small groups of companies implement new and customized registered apprenticeships. As part of their state manufacturing ecosystems, MEP Centers are partnering with local and state education systems including career and technical education programs, community colleges and universities to provide access to career pathways, training opportunities, mentorships, internships and apprenticeships.

Spotlight On: Smart Talent

Across all sectors, manufacturers face a lack of skilled labor, high labor costs, slow training processes and worrisome rates of employee turnover. All these workforce issues make it difficult to sustain growth. A group of MEP Centers, using strategic competition funding, are piloting a program to address these challenges through a flexible methodology known as Smart Talent. Developed by MEP National Network workforce solutions experts, Smart Talent helps manufacturers attract talent, engage existing employees, and enhance training and development capabilities in order to lower operating costs, improve productivity and realize growth.

Smart Talent is about:

Attracting: Making your company a desirable place to work

Training: Onboarding effectively and defining development paths for existing employees

Engaging: Instituting performance-based pay and promotion

Puerto Rico Manufacturing Extension Inc. (PRiMEX, the Puerto Rico MEP Center), piloted Smart Talent with a cohort of 10 companies. Started early in 2020 with in-person workshops, the program had to transition to a virtual delivery model in March 2020 due to COVID-19 restrictions.

The program consists of five virtual sections of two- and three-hour sessions that include online practices and mentoring to implement tools and techniques incorporated into the new approach. Module topics include:

- Learn to attract, retain and engage your talent
- How to structure an onboarding-to-work program
- How to structure on-the-job training
- How to measure and identify performance
- How to identify development paths in employment so that talent experiences growth and progress

> "Through the certification's systemic approach, the participant will learn the ability to manage their talent, impacting their company either by reducing operational costs, improving performance or promoting growth. Job marketing has been changing with the pandemic. It's even more necessary to understand our people, their needs and also meet the goals of the company."
>
> — Smart Talent Program Director Nora L. Henriquez

Coming in 2021

NIST and NIST MEP will mark the 20th anniversary of Sept. 11, honoring the heroes and remembering those who died.

Defense Manufacturing Supply Chain Support

In 2021, the MEP program will continue to address the needs of small defense manufacturers through supply chain development efforts including:

- Cybersecurity awareness and technical assistance relating to both DFARS and CMMC requirements
- Technology insertion into U.S. Navy shipbuilding and ongoing participation in regional and local innovation ecosystems for the U.S. Navy
- Ongoing coordination between DOD-sponsored Manufacturing USA institutes and MEP Centers
- Identifying and providing technical assistance to current and potential small manufacturers supplying the defense industrial base
- Partnerships at the national and MEP Center levels with various components of the DOD

Manufacturer/Supply Chain Resilience

The global pandemic and other events of 2020 created significant disruptions to the many manufacturing supply chains critical to U.S. national and economic security and public health. The MEP program plays a significant role in helping U.S. manufacturers and supply chains with the ability to adapt to change. In 2021, the MEP program will place a special emphasis on manufacturer/supply chain resilience to ensure that MEP Centers nationwide can provide technical assistance to manufacturers that both prepares manufacturers to be ready for change and helps manufacturers adapt when they need to. MEP manufacturer/supply chain resilience efforts will focus on the many facets of resilience relating to supply chain and sourcing strategies, in-factory processes and operations, as well as customer and market strategies and opportunities.

National Defense Authorization Act

The National Defense Authorization Act (NDAA) for FY 2021 mentions the MEP program in several sections, including relating to the provision of cybersecurity assistance for small defense manufacturers, a national supply chain database, and coordination with Manufacturing USA institutes. Planning and other actions are underway relating to these NDAA sections. For Section 9413, "National Institute of Standards and Technology Manufacturing Extension Partnership Program Supply Chain Database," the NDAA calls for the NIST Director to carry out a study to evaluate the feasibility, advisability and costs of establishing a national supply chain database within the MEP program to understand the manufacturing capabilities of U.S. manufacturers and minimize disruptions to the supply chain, which may include defense supplies, food, and medical devices, including personal

protective equipment. NIST MEP will conduct this study in 2021 and prepare a report for the NIST Director based on this study that will be delivered to Congress in 2021.

NIST MEP State Partnership Support Program

In FY 2021, NIST MEP will fund the new NIST MEP State Partnership Support Program with up to $5 million in federal funding over a period of five years. NIST MEP will seek an applicant to develop and enhance effective collaborative relationships with states and other stakeholders. Stakeholders include state, county, community and city-level partners, as well as regional partners that extend beyond state boundaries. The project activities will advance MEP National Network relationships with these partners, and strengthen MEP's ability to help U.S. manufacturers identify and adopt new technologies for improved products, processes and business practices.

The MEP State Partnership Support Program will generate strategies, market intelligence and analytical resources to support the efforts of MEP Centers, NIST MEP and the nation's manufacturers to leverage all applicable resources available at regional, state and local levels that support or complement MEP's ability to enhance the productivity and technological performance of U.S. manufacturing. In order to leverage these resources, activities will include:

- Collecting and analyzing available data at the regional, state and local levels to inform strategies, services and performance
- Evaluating current practices and trends to inform MEP program initiatives and policy decisions
- Developing and expanding the network of state, regional and local leaders supporting manufacturers, MEP Centers and the MEP mission
- Ensuring that MEP Centers are effectively aligned with state, regional and local priorities
- Increasing state support of the MEP mission and of state and local manufacturers

Supplier Scouting

In 2021, the MEP program will continue to provide supplier scouting services for government agencies, original equipment manufacturers, prime contractors and other entities seeking to increase the robustness of their domestic supply chains. MEP Supplier Scouting is a mechanism that identifies and provides assistance to U.S. manufacturers with the capabilities and capacities to meet supply chain needs for domestic sourcing within many industries that constitute the U.S. manufacturing sector. This applies to supply chains where manufactured products are in critical shortage — such as medical equipment, supplies and personal protective equipment; supply chains seeking to reshore products and supplies manufactured overseas; and virtually any other supply chains seeking to identify new U.S. supplier sources, including food, consumer goods, transportation, energy products and others.

Workcred

As a result of a 2018 project funded by NIST, Workcred, Inc., an affiliate of American National Standards Institute, released a first-of-its-kind national manufacturing research report, "Examining Quality, Market Value, and Effectiveness of Credentials in the United States." The study revealed that credentials have uneven use in the manufacturing industry and are not routinely required or used as a major factor in hiring or promotion decisions. Based on the findings of the initial study, Workcred assessed that more data is needed to demonstrate the value and effectiveness of a credential. In September 2019, Workcred received an award from NIST MEP totaling $498,845 for research examining the return on investment (ROI) of manufacturing credentials. This research will give manufacturers a better understanding of how credentials can serve as an important resource in identifying skilled workers. The two-year study will evaluate the ROI of existing manufacturing-related credentials, with a focus on credentials used in the operations/production aspects of manufacturing. MEP Center client manufacturers representing a range of manufacturing sectors, facility sizes and geographic regions will be selected for the study. The final report is expected in late 2021.

Manufacturing Day 2021

Oct. 1, 2021 will mark NIST MEP's 10th year of participating in Manufacturing Day (MFG Day). On MFG Day 2021, NIST MEP and MEP Centers will draw public attention to manufacturing's present day reality and encourage careers in this secure and growing sector of the economy. MEP Centers will work with local manufacturers to plan events and spread the word about MFG Day 2021 to ensure its success.

We believe that by being an active part of this national outreach effort manufacturers will find additional resources to address the skilled labor shortage many face, connect with future generations, take charge of the public image of manufacturing and help ensure a prosperous future for manufacturing throughout the U.S. Hope to see you there!

MEP Centers

MEP Centers serve as the foundation of the MEP program. 51 MEP Centers are located in all 50 states and Puerto Rico. Over 1,400 trusted advisors and experts at more than 385 MEP service locations provide any U.S. manufacturer with access to resources they need to succeed.

Alabama
Alabama Technology Network (ATN)
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Alaska Manufacturing Extension Partnership Center
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Baton Rouge, LA 70806
Phone: 337-394-2763
www.mepol.org

Maine
Maine Manufacturing Extension Partnership (Maine MEP)
87 Winthrop St.
Augusta, ME 04330
Phone: 207-623-0680
www.mainemep.org

Maryland
Maryland Manufacturing Extension Partnership (MD MEP)
8894 Stanford Blvd., Suite 304
Columbia, MD 21045
Phone: 443-343-0085
www.mdmep.org

Massachusetts
Massachusetts Manufacturing Extension Partnership (MassMEP)
27A Midstate Dr., Suite 200
Auburn, MA 01501
Phone: 508-831-7020
www.massmep.org

Michigan
Michigan Manufacturing Technology Center (MMTC)
45501 Helm St.
Plymouth, MI 48170
Phone: 888-414-6682
www.the-center.org

Minnesota
Enterprise Minnesota
2100 Summer St., Suite 150
Minneapolis, MN 55413
Phone: 612-373-2900
www.enterpriseminnesota.org

Mississippi
Mississippi Manufacturers Association–
Manufacturing Extension Partnership (MMA-MEP)
720 N. President St.
Jackson, MS 39202
Phone: 601-948-1222
www.mma-web.org/mep

Missouri
Missouri Enterprise
1426 East State Route 72
Rolla, MO 65401
Phone: 800-956-2682
www.missourienterprise.org

Montana
Montana Manufacturing Extension Center (MMEC)
P.O. Box 174255
Montana State University
2310 University Way Building 2, Suite 1
Bozeman, MT 59717
Phone: 406-994-3812
www.montana.edu/mmec

Nebraska
Nebraska Manufacturing Extension Partnership
(Nebraska MEP)
University of Nebraska-Lincoln
3 Agricultural Communications Building
3625 East Campus Loop South
Lincoln, NE 68583
Phone: 402-472-5993
nemep.unl.edu

Nevada
Nevada Industry Excellence (NVIE)
450 Sinclair St.
Reno, NV 89501
Phone: 775-784-1935
www.nevadaie.com

New Hampshire
New Hampshire Manufacturing Extension
Partnership (NH MEP)
172 Pembroke Road
Concord, NH 03301
Phone: 603-226-3200
www.nhmep.org

New Jersey
New Jersey Manufacturing Extension Program
(NJMEP)
2 Ridgedale Ave., Suite 305
Cedar Knolls, NJ 07927
Phone: 973-998-9801
www.njmep.org

New Mexico
New Mexico Manufacturing Extension Partnership
(New Mexico MEP)
8600 San Mateo Blvd. NE, Suite 100
Albuquerque, NM 87113
Phone: 505-262-0921
www.newmexicomep.org

New York
New York Manufacturing Extension Partnership
(NY MEP)
625 Broadway
ESD, Division of Science, Technology & Innovation
(NYSTAR)
Albany, NY 12245
Phone: 518-292-5100
www.esd.ny.gov/nystar/nymep.asp

North Carolina
North Carolina Manufacturing Extension Partnership (NCMEP)
1005 Capability Drive
Research III Building, Suite 200
Raleigh, NC 27606
Phone: 919-513-6119
www.ncmep.org

North Dakota
Impact Dakota
1929 N. Washington St., Suite M
Bismarck, ND 58501
Phone: 866-297-8250
www.impactdakota.com

Ohio
Ohio Manufacturing Extension Partnership (Ohio MEP)
77 S. High St., 29th Floor
Columbus, OH 43215
Phone: 800-848-1300
www.development.ohio.gov/bs/bs_mep.htm

Oklahoma
Oklahoma Manufacturing Alliance
525 S. Main St., Suite 210
Tulsa, OK 74103
Phone: 918-592-0722
www.okalliance.com

Oregon
Oregon Manufacturing Extension Partnership (OMEP)
7650 SW Beveland St., Suite 170
Portland, OR 97223
Phone: 503-406-3770
www.omep.org

Pennsylvania
Pennsylvania Manufacturing Extension Partnership (PA MEP)
One College Ave., Dept. 32
Williamsport, PA 17701
Phone: 570-308-3312
pamep.org

Puerto Rico
Puerto Rico Manufacturing Extension Inc. (PRiMEX)
#268 Muñoz Rivera Ave.
World Plaza Building, Suite 1002
San Juan, PR 00918
Phone: 787-756-0505
www.primexpr.org

Rhode Island
Polaris MEP
315 Iron Horse Way
Providence, RI 02908
Phone: 401-270-8896
www.polarismep.org

South Carolina
South Carolina Manufacturing Extension Partnership (SCMEP)
250 Executive Center Drive, Suite 200
Greenville, SC 29615
Phone: 864-288-5687
www.scmep.org

South Dakota
South Dakota Manufacturing and Technology Solutions
2329 N. Career Ave., Suite 243
Sioux Falls, SD 57107
Phone: 605-212-5679
www.sdmanufacturing.com

Tennessee
University of Tennessee Center for Industrial Services (UT CIS)
193 Polk Ave., Suite C
Nashville, TN 37210
Phone: 888-763-7439
www.cis.tennessee.edu

Texas
Texas Manufacturing Assistance Center (TMAC)
202 East Border St., Suite 323
Arlington, TX 76010
Phone: 800-625-4876
www.tmac.org

Utah
University of Utah Manufacturing Extension Partnership (UUMEP) Center
1495 East 100 South
MEK 1121
Salt Lake City, UT 84112
Phone: 801-587-0713
mep.utah.edu

Vermont
Vermont Manufacturing Extension Center (VMEC)
1540 VT RT 66, Suite 103
VT Tech Enterprise Center
Randolph, VT 05060
Phone: 802-728-1432
www.vmec.org

Virginia
GENEDGE
32 Bridge St. South, Suite 200
Martinsville, VA 24112
Phone: 276-666-8890
www.genedge.org

Washington
Impact Washington
3303 Monte Villa Parkway, Suite 340
Bothell, WA 98021
Phone: 425-287-6808
www.impactwashington.org

West Virginia
West Virginia Manufacturing Extension Partnership (WVMEP)
317 Mineral Resources Building
P.O. Box 6070
Morgantown, WV 26506
Phone: 304-293-4211
www.wvmep.com

Wisconsin
Wisconsin Center for Manufacturing and Productivity (WCMP)
2601 Crossroads Drive, Suite 145
Madison, WI 53718
Phone: 608-729-4160
www.wicmp.org

Wyoming
Manufacturing Works
Department 3362
406 S. 21st Street
Laramie, WY 82070
Phone: 307-766-4811
manufacturing-works.com


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