

**National Institute of Standards and Technology  
Manufacturing Extension Partnership  
Advisory Board  
Minutes of the March 3, 2020 Meeting**

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## Background

The Department of Commerce (DOC), National Institute of Standards and Technology (NIST), Manufacturing Extension Partnership (MEP) Advisory Board (Board) met in an open session from 8:15 a.m. to 12:30 p.m. on March 3, 2020 at the NIST Gaithersburg Campus, Building 101, Portrait Room, 100 Bureau Drive, Gaithersburg, Maryland. The meeting included about 60 attendees including Board members, NIST and NIST MEP staff, participants from MEP Centers, guest speakers and observers. Cheryl Gendron is the Designated Federal Officer for the MEP Advisory Board.

## Attendees

### Board Members

Jose Anaya, Dean of Community Advancement, El Camino College  
Donald Bockoven, Fiber Industries LLC\*  
E. LaDon Byars, President and CEO, Colonial Diversified Polymer Products, LLC  
Bernadine Hawes, Chair, MEP Advisory Board and Senior Research Analyst, Community Marketing Concepts  
Kevin Heller, CEO and CFO, Ziegenfelder Company  
Mary Isbister, President, GenMet Corporation  
Mitch Magee, Director, Global Advanced Manufacturing Team, PPG Aerospace Business Unit\*  
Patricia Moulton, President, Vermont Technical College  
Matthew Newman, Vice Chair, MEP Advisory Board and Director of Sustainability Advocacy and Development, ONEOK, Inc.  
Kathay Rennels, Special Advisor to the Chancellor for Rural-Urban Initiatives, Colorado State University  
George Spottswood, Owner and CEO, Quality Filters, Inc.  
Leslie Taito, CEO, Hope Global  
Chris Weiser, Owner and President, J.V. Manufacturing, Inc.  
Jim Wright, Vice President of Operations, Proof Research

### NIST MEP Participants

Cheryl Gendron, Advisory Board Liaison, NIST MEP and Designated Federal Officer, MEP Advisory Board  
David Stieren, Division Chief, Extension Services Division, NIST MEP  
Carroll Thomas, MEP Director  
Ben Vickery, Manager, Marketing and Communications Group, NIST MEP

### Guest Speakers

Dr. Joannie Chin, Deputy Director, NIST Engineering Laboratory

### Observers

Ray Aguerrevere, Custom Metal Designs, Inc.  
Nicole Ausherman, NIST MEP

Robert Barnes, NIST MEP  
Leah Barton, Iowa Center for Industrial Research and Service (CIRAS)  
Steve Black, Utah MEP  
Buckley Brinkman, Wisconsin Center for Manufacturing & Productivity  
Tom Bugnitz, Manufacturer's Edge  
Amber Cassady, Lewis-Burke Associates  
Monica Claussen, NIST MEP  
Jose Colucci, NIST MEP  
Dusty Cruise, Missouri Enterprise  
Jennifer Hagan-Dier, NIST MEP  
Diane Henderson, NIST MEP  
Rob W. Ivester, Ph.D., U.S. Department of Energy  
Mike Kelleher, MD MEP  
Wiza Lequin, NIST MEP  
Kathie Mahoney, MassMEP  
Heather Mayton, NIST MEP  
Kevin McIntyre, NIST MEP  
Dimitrios Meritis, NIST MEP  
Mike O'Donnell, CIRAS  
Mary Ann Pacelli, NIST MEP  
Andrew Peterson, NIST MEP  
Kim Pinckney, NIST MEP  
Ken Poole, Center for Regional Economic Competitiveness  
Katie Rapp, NIST MEP  
Kari Reidy, NIST Office of Congressional and Legislative Affairs  
Jennifer Rosa, NIST MEP  
Johnny Ross, Texas Manufacturing Assistance Center (TMAC)  
Gerson Santos-Leon, NIST MEP  
Mark Schmit, NIST MEP  
Mark Sessumes, TMAC  
Carol Shibley, NIST MEP  
Phil Singerman, Ph.D., NIST Associate/Retired  
Vijay Srinivasan, NIST Engineering Laboratory  
Dileep Thatte, NIST MEP  
Pat Toth, NIST MEP  
Ken Voytek, NIST MEP  
Phillip Wadsworth, NIST MEP  
Marlon Walker, NIST MEP  
Michael Wilson, NIST MEP

\*Participated Remotely

## Welcome and Introductions

### Speakers:

Bernadine Hawes, Chair, MEP Advisory Board  
Carroll Thomas, Director, MEP

B. Hawes made introductory remarks. C. Thomas thanked the MEP Advisory Board for their service and provided an overview of the day's agenda. Board members and attendees introduced themselves. C. Thomas welcomed new Board members, including Kevin Heller who was present, and recognized Donald Bockoven and Dr. Willie E. May who were not able to attend the face to face meeting.

## MEP Director's Update

**Speaker:** Carroll Thomas, Director, MEP

MEP Program Budget Outlook (as of Feb. 21, 2020)

- Fiscal Year (FY) 2020 appropriation status:
  - President's Budget proposed to eliminate funding for the MEP program.
  - Congress approved \$146 million.
  - President signed appropriation into law December 2019.
- FY 2021 appropriation status:
  - President's Budget proposes to eliminate funding for the MEP program.

NIST MEP FY 2020 Projected Spend Plan

- Available funding:
  - Full year appropriation: \$146 million.
  - Carryover from FY 2019: \$4.7 million.
  - Funding from other agencies: \$3.4 million.
    - Total available funding: \$154.1 million.
- Planned expenditures:
  - Center renewals: \$120.3 million.
  - Strategic competitions: \$10.6 million.
  - Contracts: \$5.5 million.
  - NIST MEP labor: \$10.3 million.
  - NIST and program overhead: \$7.4 million.
    - Total planned expenditures: \$154.1 million.

MEP National Network™ (MEPNN) Center Leadership Team (CLT)

- MEPNN NIST MEP Leadership Team created.
  - Staff of NIST MEP working to coordinate and communicate CLT activities internally.
- Strategic group from the CLT met in January 2020 in California.
  - Past: Review of output from the last three years.
  - Future: 2020 emphasis on operationalizing the MEPNN.
- Direction forward.
  - Facilitation services provided through The Clearing.
    - Interviews conducted with all 51 MEP Center directors for the CLT to better understand their perspectives on the MEPNN.
  - Alignment among all nodes in the MEPNN.
    - Discuss meaning of phrase "Go-to Centers."
      - Emphasis on cybersecurity.
    - Operationalizing multi-Center client engagements.

#### Industry 4.0: Advanced Manufacturing for end-to-end cyberphysical connectivity activities across the Network

- The CLT Committee on Advanced Manufacturing (AM) is helping to clarify technology focus areas, small and medium-sized manufacturers' (SMMs) needs, along with a Competitive Awards Program (CAP) project led by Oregon MEP involving multiple Centers.
- AM Technology Services Notice of Funding Opportunity from NIST closed Feb. 6. NIST anticipates making approximately three funding awards in April to accelerate MEP Center service delivery in Industry 4.0.
- MEPNN Industry 4.0 Working Group established with participation from several dozen MEP Centers to share best practices.
  - Facilitated by NIST MEP.
- MEP Centers using user/demonstration facilities and continuing to collaborate with Manufacturing USA Institutes.

#### NIST MEP Extension Services in Support of the MEPNN

- Food industry services.
  - Food safety continues to drive MEP Center services for small U.S. food manufacturers.
  - Five active CAP projects developing Center approaches (Georgia, Massachusetts, Missouri, Montana, New Jersey, Puerto Rico).
  - National partnerships with U.S. Food and Drug Administration and Food Safety Preventive Controls Alliance and also collaborating with Global Food Safety Initiative.
  - MEPNN Working Group sharing best practices among MEP Centers.
- MEP-Assisted Technology and Technical Resource (MATTR).
  - Connecting SMMs with NIST laboratories.
  - Over 40 MEP clients from approximately 20 MEP Centers connected with NIST laboratory expertise and technical resources to address client metrology and product/process issues.
  - MEPNN Working Group operating to continue developing MATTR as an MEP Center service.
  - NIST MEP facilitating cooperative research and development agreements (CRADAs) between MEP Center clients and NIST laboratories and compensating NIST laboratories as warranted by MATTR opportunities.

#### Cybersecurity Practice Developing Across the Network

- MEPNN Cyber Working Group sharing best practices among Centers (49 Centers participating).
- Cyber for Defense Award from NIST MEP to Michigan MEP Center focused on awareness, with assistance for over 1,000 defense contractors and participation from over 30 MEP Centers.
- Additional NIST MEP activities supporting cybersecurity:
  - Over 3,400 SMMs served.
  - Approximately 78,000 NIST Handbook 162 downloads since 2017.
  - Over 900 projects conducted since 2015.
  - Approximately 225 awareness/training events.

#### MEP Organization

- Dr. Rob W. Ivester will be the new deputy director of NIST MEP as of March 30, 2020.
- In addition to her role as NIST MEP director, Carroll Thomas has been serving as acting associate director for Innovation and Industry Services.

#### NIST MEP on the M.O.V.E. (MEP on Virtual Engagement)

- NIST MEP staff in temporary office locations in three NIST buildings since their November 2018 departure from Building 301.
- Fall 2020 target timeframe for return to Building 301 offices.
- NIST MEP Move Back In Committee.
  - Developed office/workspace allocation policies and recommendations for staff assignments for NIST MEP management.
    - Forwarded to NIST Office of Facilities and Property Management (OFPM) in February 2020.
  - Will address ongoing issues for NIST MEP as needed according to OFPM office space renovation project schedule.
    - Includes networking, printers, copiers, furniture, etc.

#### Discussion

- P. Moulton asked if the work NIST MEP is funding in conjunction with the Office of the Secretary of Defense through an interagency agreement was a CRADA or a different type of partnership with the NIST laboratories. D. Stieren said the CRADA projects mentioned above refer to work that is specific to MATTR and is outside of the interagency agreement which does not currently involve cybersecurity. C. Thomas confirmed that partnerships with NIST laboratories come in many different forms. B. Hawes suggested as an agenda item for another meeting that D. Stieren and M. Walker present examples of MEP clients working with NIST laboratories through MATTR.
- L. Taito strongly encouraged bringing business continuity and contingency planning for small businesses back to the forefront of MEP's attention. It may be time to look through some of the services NIST MEP previously provided and bring them back out.
- J. Wright commented that selecting an enterprise resource planning (ERP) system that fits the needs of SMMs is a major consideration. SMMs struggle to fully utilize the benefits of ERP systems and each thing they learn has significant benefits. P. Moulton said that Vermont's state college system has a diagnostic for selecting an ERP system that might be something NIST MEP could build on in creating their own. M. Sessumes added that there is a Consumer Reports-type assessment service that TMAC relied on and found very useful.

## MEP National Network 2017-2022 Strategic Plan Update

**Speaker:** Carroll Thomas, Director, MEP

#### MEP National Network 2017-2022 Strategic Plan Goals

- Empower Manufacturers.
  - Objective: To assist U.S. manufacturers in embracing productivity-enhancing, innovative manufacturing technologies; navigate advanced technology solutions; recruit and retain a skilled and diverse workforce.
- Champion Manufacturing.
  - Objective: To actively promote the importance of a strong manufacturing base as key to a robust U.S. economy and for the protection of national security interests; create awareness of innovations in manufacturing; create workforce development partnerships to build a stronger and diverse workforce pipeline; maximize market awareness of the MEP National Network.

- Leverage Partnerships.
  - Objective: To leverage national, regional, state and local partnerships to gain a substantial increase in market penetration; identify mission-complementary advocates to help MEP become a recognized manufacturing resource brand; build an expanded service delivery model to support manufacturing technology advance.
- Transform the Network.
  - Objective: To maximize MEP National Network knowledge and experience so that it operates as an integrated National Network; increase efficiency and effectiveness by employing a Learning Organization platform; and create a resilient and adaptive MEP National Network to support resilient and adaptive U.S. manufacturing.

#### Latest 18-month Goals (September 2019-March 2021)

- Consensus within integrated National Network.
  - Reach Network consensus on definition of project and client manufacturing establishment interaction.
- Center and program office operational excellence.
  - Operationally improve reporting via measurement of on-time and accurate reporting.
- Increase projects and new clients.
  - Increase reported projects by 10% and reported new clients by 5%.
- Increased visibility.
  - Amplify and measure Network brand awareness by at least 10%.

#### 18-month Measures of Success

- Goal: Increase projects by 10%.
  - Baseline: 14,109.
  - Fourth quarter 2019: 14,828.
  - Goal: 15,520.
- Goal: Increase new clients by 5%.
  - Baseline: 4,101.
  - Fourth quarter 2019: 4,345.
  - Goal: 4,306.
- Goal: Improve on-time reporting measurement.
  - Four elements measured.
    - Progress plan.
    - Progress data.
    - Clients/projects.
    - Survey confirmation.
  - Baseline (second quarter 2019):
    - 40 Centers reported on-time with first three elements.
    - 24 Centers reported on-time across all four elements.
  - Progress to date (fourth quarter 2019):
    - 38 Centers reported on-time with first three elements.
    - 23 Centers reported on-time across all four elements.
- Goal: Definitional consensus.
  - Define:
    - Client and project.
    - Client manufacturing establishment interaction.
  - Working group of Center directors is being established.
- Goal: Amplify and measure Network brand awareness by at least 10% – baselines established Oct. 1, 2019–Dec. 31, 2019, progress to date to be announced next quarter.

- Backlinks.
  - Baseline: 104.
  - Goal: 114.
- Brand mentions.
  - Baseline: 125.
  - Goal: 138.
- Manufacturing Innovation blog subscribers.
  - Baseline: 24,920.
  - Goal: 27,412.
- Social media followers.
  - Baseline: 16,240.
  - Goal: 17,864.
- #MEPNationalNetwork hashtag occurrences.
  - Baseline: 334.
  - Goal: 367.

### Discussion

- L. Byars noted that the goal for increasing new clients by 5% was already surpassed and this will bring more recognition to MEPNN.
- P. Moulton said that one issue to come out of the executive committee's outreach effort is burnout, particularly among small Centers in states with a large amount of rural manufacturers. This will be a significant issue going forward. C. Thomas said this a serious concern and NIST MEP offers assistance to the Centers that are able to help to reach out to the Centers that are struggling with this. The Center that goes in to help receives the impact credit and the assisted Center will pay for the services provided. L. Taito said NIST MEP needs to look further into how to incentivize cross-Center collaboration so that it is not just a matter of who gets impact credits or who generates revenue, but that there are strategic measures in place to ensure collaboration.
- B. Hawes commended NIST MEP for clarifying what a project is. She also said they need to look at compression, specifically why companies and Centers are compressing in their services areas.

## Overview of the NIST Engineering Laboratory

**Speaker:** Dr. Joannie Chin, Deputy Director, NIST Engineering Laboratory

NIST Engineering Laboratory Mission: To promote U.S. innovation and industrial competitiveness by advancing measurement science, standards and technology for engineered systems in ways that enhance economic security and improve our quality of life.

NIST Engineering Laboratory is organized around four programmatic goals

- Resilience.
  - Objective: To reduce the risk and enhance the resilience of buildings, infrastructure and communities to natural and manmade hazards through advances in measurement science.
    - Community resilience.
    - Earthquake risk reduction.
    - Engineered materials.
    - Fire risk reduction – buildings.
    - Fire risk reduction – communities.
    - Structural performance under multihazards.

- Smart Manufacturing.
  - Objective: To enable the next generation of innovative and competitive manufacturing through dynamic production systems and rapid design-to-production transformation.
    - Additive manufacturing.
    - Manufacturing robots.
    - Model-based enterprise.
    - Trustworthy systems, components and data for smart manufacturing.
- Cyber Physical Systems.
  - Objective: To enable scalable, dependable and reproducible performance measurement of reliable, resilient, safe, secure and privacy-enhancing cyberphysical systems.
    - Cyberphysical systems.
    - Smart grid.
- Energy.
  - Objective: To enable sustainable and energy efficient manufacturing, materials and infrastructure through advances in measurement science.
    - Embedded intelligence in buildings.
    - Net-zero high performance buildings.

#### Flagship Facilities

- Net-zero Energy Research Facility.
  - Residential house that serves as a laboratory.
  - Demonstrated ability to produce at least as much energy as it consumes with a simulated family of four in residence.
  - Provides capability to test high-efficiency and alternative energy systems, materials and designs in a real home rather than a laboratory.
- National Fire Research Laboratory.
  - A unique experimental facility dedicated to understanding fire behavior and structural response to fire through experimental research.
  - 3,000 square meters of testing space with exhaust hoods that can handle 1, 3, 10 and 20 megawatt fires, as well as a strong floor and strong wall for controlled structural loading.
  - Enables generation of data to improve fire and building codes, validation of models and advancement of full-scale fire measurements.
- Metal Additive Manufacturing Research Center.
  - Includes two commercial metal-based additive manufacturing systems which build parts from metal powders using two different additive manufacturing processes: direct metal laser sintering and binder jetting.
  - NIST research in this facility is focused on developing measurement science solutions for characterizing powders, processes, machines and manufactured parts, as well as introducing process monitoring and control methods to improve the quality and reproducibility of the parts resulting from the processes.
- Additive Manufacturing Metrology Testbed.
  - Joint Engineering Laboratory and Physical Measurement Laboratory project to obtain a greater scientific understanding of additive manufacturing processes in real time.
  - Consists of a custom metal 3D printer with capability to control the process laser, including spot size, power and scan speed, while simultaneously monitoring the temperature and emittance of the metal melt pool as the part is being produced.
- Manufacturing Robotics and Response Robotics Facilities.
  - Laboratory for developing standard methods of measuring robot performance.
  - Measures how well robots perform under real-world challenges such as urban search and rescue, bomb disposal, ground operations and manufacturing.



- Data and test designs/methodology are submitted to standards development organizations.
- NIST has a number of different robot manufacturing facilities which focus on collaborative robots, autonomous industrial vehicles, measuring the agility of industrial robots and prognostics and health monitoring of industrial robots.
- Intelligent Building Agents Laboratory.
  - Unique facility designed to enable the development and testing of distributed, intelligent software agents that optimize system-level performance of building heating, ventilating and air conditioning systems.
  - A complex building-in-a-laboratory that enables reproducible testing and comparison of optimization techniques using real building mechanical equipment and systems and controlled weather conditions.
- SPHERE (Simulated Photodegradation via High Energy Radiant Emission).
  - High-intensity UV weathering device equivalent to 30-50 “suns” worth of UV radiation.
  - Enables scientists to create and control a number of environmental pressures, including sunlight and humidity.
  - Measuring how well materials perform under various weather conditions which will allow industry researchers to make improvements in future products.

#### Manufacturing USA Network Engagement

- Engineering Laboratory staff are engaged with a number of Manufacturing USA Institutes, serving on project teams, as technical project leads or in some type of technical advisory capacity.
  - America Makes, Youngstown, Ohio.
  - Advanced Robotics for Manufacturing, Pittsburgh, Pennsylvania.
  - Clean Energy Smart Manufacturing Innovation Institute, Los Angeles, California.
  - Manufacturing times Digital (MxD), Chicago, Illinois.

#### Engineering Laboratory-MEP Collaborations

- TechSolve (part of Ohio MEP).
  - To create publicly-available guidelines for merging multiple data sources that support maintenance activities.
  - To explore the applicability and performance requirements for collaborative robots in small manufacturing enterprises, leading to the understanding of the state of collaborative robotics adoption.
- Two SMMs.
  - To pilot cybersecurity program implementations of the Cybersecurity Framework (CSF) Manufacturing Profile. The results will be used to develop cybersecurity implementation guidance that can be used by all MEP client companies nationally.
- FuzeHub (part of New York MEP).
  - To pilot a test method that identifies and isolates sources of robot workcell health degradation in multiple manufacturing facilities to produce deployment guidance.
- Engineering Laboratory and NIST MEP cosponsored a workshop to understand the current state of adoption of collaborative robotics within the SMM community.
- Catalyst Connection (part of Pennsylvania MEP).
  - Facilitated visits to SMMs by NIST robotics program personnel.
- Participation of multiple state MEP Centers and SMMs in standards meetings, technical conference panels and NIST-led workshops.
  - California Manufacturing Technology Consulting (California MEP).
  - CAVS Extension - Mississippi State University (part of Mississippi MEP).
  - GENEDGE (Virginia MEP).

- MANTEC (part of Pennsylvania MEP).
- Manufacturer's Edge (Colorado MEP).
- TechSolve (part of Ohio MEP).
- Ludowici (Ohio SMM).
- Trividia Health (Florida SMM).

### Discussion

- L. Taito asked if the Engineering Laboratory planned to take up work on flooding issues. J. Chin said some of their investigations have included the impacts of flooding on communities, particularly in regards to storm surge. While they do not currently have a technical program dedicated to flooding, it is an issue that has come up repeatedly.
- C. Thomas asked if the Engineering Laboratory will be involved in the response to the recent tornado that struck Nashville, Tennessee. J. Chin said their National Construction Safety Team was likely scoring the event, but the Engineering Laboratory does not deploy to every disaster as not every disaster provides the opportunity to learn about what improvements to building codes and standards could be made. They are an analogous program to the National Transportation Safety Board in that they conduct an investigation of an event and provide a report of their findings.
- P. Moulton asked for details on the Engineering Laboratory's technology transfer process. J. Chin said that staff are encouraged to patent technology that comes out of their research so it can be licensed. They also have many technologies available in the public domain. In addition to publishing in scientific journals, NIST laboratories also publish to industry trade publications in order to disseminate their work to practitioners. The Engineering Laboratory works with the Small Business Innovation Research program extensively and develops multilateral CRADAs with companies. The Engineering Laboratory has the greatest number of consortia in NIST and in exchange for participation fees offers a self-imposed moratorium on publishing their results in order to give member companies a competitive advantage.
- M. Isbister asked if there are any geothermal elements in the Net-Zero Energy Research Facility. J. Chin said the house was built with a geothermal loop and contains three geothermal heating systems, as well as an extreme amount of insulation and closure.
- J. Wright asked where the technology for fighting fires is developed within the federal government. J. Chin said the Engineering Laboratory has a fire research division that has been actively involved in fires along the wildland-urban interface. The way these fires spread is by windborne embers, for which there had been no science available. The Engineering Laboratory has developed imaging systems and conducted controlled experiments to better understand how embers are transported and what types of embers may be in a specific area.

## MEP National Network Branding and Communications

**Speaker:** Ben Vickery, Manager, Marketing and Communications Group, NIST MEP

### Brand Initiative Background

- MEP Centers identified a lack of awareness as one of their top challenges.
- To build a brand for the MEP National Network to:
  - Increase national awareness and cohesiveness.
  - Build stronger more effective alliances.
  - Mission fulfillment to reach and serve more U.S. SMMs.

## Internal Tools for Building and Strengthening the Brand

- Brand Implementation Kit.
  - Created so Center staff can educate themselves about the Network brand and have access to co-branded assets for use in client-facing communications.
  - Includes Center educational materials including:
    - PowerPoint presentation: Explains the Network, its value and how Centers can represent the national organization.
    - “When to Network” flyer: To advise clients that you are part of the National Network.
      - To let them know you have the backing of a larger organization.
      - To help coordinate projects across state lines (e.g., supply chain).
      - To provide them with access to expertise you may not have in house.
    - Network Directory: A brochure with contact information for each Center in the MEP National Network.
  - Includes client-facing materials, including:
    - PowerPoint slides: The MEP National Network developed 18 slides that outline statistics and Network benefits for your potential clients.
      - Incorporate slides or content into presentations to clients.
      - The slides and content are easy to copy and paste and alter to align with your Center’s brand guidelines.
    - Marketing sheet: A co-branded marketing sheet was designed so Centers can introduce their affiliation with the MEP National Network.
      - Editable two-page PDF document that identifies the Network and its value (along with the Center’s) for potential clients.
      - Centers can add their logo, boilerplate and contact information.
    - Email content: An outbound email introduces the MEP National Network and its value to potential clients, Centers can incorporate it into their own templates or email marketing program.
- Co-brandable marketing materials/sell sheets for specific services or programs.
  - One-pagers representing data for the entire Network on various topics.
- Social media and content curation kits.
- All of these materials can be found on the Brand Page on MEP Connect:
  - <https://mic.nist.gov/Pages/National-Network-Brand.aspx>

## External Tools for Building and Strengthening the Brand

- Sponsored content in trade publications, including:
  - IndustryWeek.
  - Industry Today.
  - Quality Digest.
- Social media.
  - 6,962 followers on Twitter.
  - 9,520 followers on Facebook.
  - 1,422 members in LinkedIn Group, as well as a Showcase Page.
  - Social media campaign: Meet the Network.
    - Three-phase campaign to generate awareness about MEP Centers, highlight Center staff and bring attention to Network successes.
- Events.
  - Coordinated a highly visible tradeshow presence.
    - IndustryWeek’s Manufacturing and Technology Show in Pittsburgh, Pennsylvania.

- Southern Automotive Conference in Nashville, Tennessee.
- Looking to support the International Manufacturing Technology Show this fall in Chicago, Illinois.
- Earned media.
  - Jim Watson, director of CMTC, was featured in a Forbes Magazine article about the MEP National Network.
  - Jennifer Kurtz of Manufacturer’s Edge was interviewed for Quality Digest on cybersecurity.
  - Kathie Mahoney of MassMEP wrote an article on one of their clients, Silverside Detector, for IndustryWeek.

### **Discussion**

- G. Spottswood asked if MEP has considered hosting an online event to enable Center directors to get the word out about these materials. B. Vickery said they presented some of this information at MEP National Network Summit in Atlanta, Georgia. They also have quarterly marketing group webinars that afford them an opportunity to share. They are always looking for more opportunities to share information.
- L. Taito asked if the term “part of the MEP National Network” diminishes the role of the Centers. A stronger word like “member” might be worth considering. B. Vickery asked if “representative” carried more weight, but L. Taito felt “member” conveys reciprocity and a greater value proposition.
- M. Newman said the power of social media is amazing and Center directors are ambassadors for the MEP National Network. He encouraged everyone to take the time to like and share posts in order to amplify the MEPNN’s presence. B. Vickery agreed that it is easy to be involved on social media and recommended people check out the Network’s social media kit.

## **MEP Advisory Board Working Group Updates**

### **Supply Chain Development Working Group**

#### **Speakers:**

Matt Newman, Vice Chair, MEP Advisory Board

Dave Stieren, Division Chief for Extension Services Division, NIST MEP

#### **Committee Members**

- Board leaders:
  - Matthew Newman.
- Board members:
  - LaDon Byars, Bernadine Hawes, Mary Isbister, Chris Weiser.
- NIST MEP support:
  - Dave Stieren, Mark Schmit.

#### **Working Group Deliverable**

- Guidance and perspectives on the MEP National Network support and development of manufacturing supply chains with an emphasis on defense suppliers regarding defense industrial base gaps and expertise on who should be brought into the discussion to provide insight on defense supplier gaps.

#### Discussion Topics for the Board

- The MEP National Network supports Department of Defense (DoD) supply chains in many areas, highlighted by:
  - Cybersecurity awareness and assistance.
  - Working with the DoD in technology transfer/transition involving defense manufacturing suppliers.
- NIST MEP seeks ongoing MEP Advisory Board perspectives on these MEP National Network focus areas, approaches and challenges.

#### MEP National Network Cybersecurity as of February 2020

- MEP National Network cybersecurity assistance for SMMs continues to develop nationwide capabilities.
  - Continues to be spurred by strong partnerships with DoD.
  - Continued MEP role with Defense Federal Acquisition Regulation Supplement (DFARS) requirements for defense sector.
  - Emerging MEP Center role with new DoD Cybersecurity Maturity Model Certification (CMMC) program.

#### MEPNN Cybersecurity Progress Summary (as of March 2020)

- MEP National Network has made significant progress and continues to move forward addressing important needs.
  - Defense contractor cybersecurity implementation still low.
  - 49 out of 51 MEP Centers active in Cybersecurity Working Group.
  - 48 MEP Centers with cyber practice.

#### MEPNN Progress: Cybersecurity Assistance Practice

- Expanding capabilities across the Network.
  - Over 3,400 SMMs served by MEP Centers nationwide.
  - Approximately 225 awareness and training events conducted by MEP Centers nationwide.
  - 958 cybersecurity projects conducted for U.S. manufacturers by MEP National Network since 2015.
  - NISTIR 7621 “Small Business Information Security: The Fundamentals,” downloaded over 163,000 times since November 2016 publication by Pat Toth, NIST MEP.
- Expanding capabilities across the Network.
  - 12 MEP Centers have received approximately \$15 million Office of Economic Adjustment funding, focused on working with state-based organizations.
  - Focus on cyber workforce training and education.
  - NIST Handbook 162 downloaded approximately 78,000 times since November 2017 publication by Pat Toth, NIST MEP.
  - MEPNN Cybersecurity Working Group meets every 6 weeks.

#### Highlights: MEP Cybersecurity and the DoD

- NIST MEP-Office of the Under Secretary of Defense for Research and Engineering Interagency Agreement (OUSDR&E IAA) is funding MEP Centers to serve cyber needs of small defense manufacturing suppliers between Aug. 1, 2019-Dec. 31, 2020.
  - National Network award, led by Michigan MEP, to provide nationwide cybersecurity awareness, hands-on technical assistance and pilot operational technology protections.

- Collaborating with NIST laboratories.
    - Collaborating with MxD Manufacturing USA Institute in Chicago.
  - MEP Center participation from over 30 states:
    - Alabama, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Washington, Wisconsin, West Virginia.
- Hands-on MEP Center technical assistance underway to provide defense contractors with comprehensive, hands-on technical assistance from MEP Centers to prepare for DFARS compliance.
  - Companies located in California, Colorado, Connecticut, Florida, Illinois, Maryland, North Carolina, Oregon, Pennsylvania, Texas, Vermont.
  - DoD supply chains represented by these companies include aerospace, air defense, satellite tracking, electronics, energy systems and batteries, energetics, soldier systems, fire protection and nuclear propulsion.
  - Manufacturing processes conducted by these companies include machining, additive manufacturing, electronics processing, composites manufacturing, optics manufacturing, packaging and industrial automation.
- MEP Centers and NIST MEP are working with NIST laboratories to develop new NIST CSF Manufacturing Profile Implementation Guidance.
  - MEP Center clients from Michigan and Indiana have been assessed against NIST CSF Manufacturing Profile to generate use cases for NIST laboratories to produce next iteration of Manufacturing Profile Implementation Guidance.
  - NIST laboratory activities funded by NIST MEP under NIST MEP-OUSTR&E IAA.
  - Implementation Guidance from NIST laboratories will:
    - Address operational technology vulnerabilities specific to manufacturing operations that are not covered by DFARS cybersecurity requirements.
    - Be pilot-implemented at the two participating manufacturers.

#### New DoD CMMC Program

- NIST MEP providing ongoing guidance to MEP Centers' approach.
  - Future DoD acquisitions will include required certification levels for contractors.
  - CMMC does not yet directly impact MEP Centers' engagements with small defense contractors.
  - CMMC does not negate DFARS requirements.
  - MEP working closely with DoD to understand program plans and position MEP Center role for assistance to defense contractors.
  - CMMC model released January 2020.
  - 15 member CMMC Advisory Board formed.
  - Certification of assessment organizations in summer 2020.
  - New DFARS rule on CMMC in June 2020.
  - Request for information (RFI) for ten pathfinder contracts in June 2020.
  - Request for proposals for ten pathfinder contracts in September 2020.
  - Full implementation by 2026.

#### MEP National Network Technology Transfer and Transition Support for DoD: MEP and NavalX Tech Bridges and MEP Insertion in Navy Shipbuilding

- MEP and NavalX Tech Bridges: SMM participation in new regional innovation initiatives being established by the Navy around the U.S.

- NavalX established in February 2019.
  - Creation of Tech Bridges to connect and sustain acceleration ecosystems for Navy needs in off-base Navy locations around U.S.
  - Tech Bridges are partnering with start-ups, academia, corporations, small businesses, non-profits, private capital and government entities.
  - Tech Bridges are building sustainable networks for collaboration and accelerating problem-solving, supporting collision spaces and generating dual-use solutions.
- MEP Centers operating in Tech Bridge states are working with Tech Bridges to engage SMMs.
  - Tech Bridges currently in California, Florida, Indiana, Rhode Island, South Carolina, Washington.
  - Other Tech Bridges being considered for the Washington DC/Virginia/Maryland region, Hawaii, Virginia and others.
  - Polaris MEP (Rhode Island MEP) is out in front.
  - NIST MEP negotiating national partnership with the Office of Naval Research for execution in 2020 to engage and fund MEP Center efforts in Tech Bridge activities.
- MEP and Navy Shipbuilding.
  - NIST MEP-Naval Sea Systems Command IAA.
    - Provides funding to NIST MEP for MEP Centers to identify and insert leading-edge manufacturing technology into Navy shipbuilding applications.
    - Currently focused on steel fabrication and assembly operations used in production of Ford Class aircraft carriers at Newport News Shipbuilding in Newport News, Virginia.
    - Current MEP Center tasking led by GENEDGE Alliance (Virginia MEP).
    - IAA structured for national expansion to other shipbuilding applications in other states and involving other MEP Centers.
    - National cohort of MEP Centers established in states where Navy shipbuilding occurs (public and private yards) to prepare for expansion of efforts.

## Discussion

- K. Rennels asked who will do the certification for the CMMC program. D. Stieren said CMMC has created a non-governmental accreditation advisory board tasked with determining how certifications will occur and how the entities conducting the certifications will be accredited. This body will likely be composed of non-profits, academia and private entities.

## Executive Committee Working Group

### Speakers:

Cheryl Gendron, Advisory Board Liaison, NIST MEP  
 Bernadine Hawes, Chair, MEP Advisory Board  
 Matt Newman, Vice Chair, MEP Advisory Board  
 Carroll Thomas, Director, NIST MEP

### Committee Members

- Board leaders:
  - Bernadine Hawes, Matt Newman.
- Board members:
  - Mitch Magee, Pat Moulton, George Spottswood.

- NIST MEP support:
  - Cheryl Gendron, Wiza Lequin, Carroll Thomas, Phill Wadsworth.

#### Working Group Deliverable

- Provide guidance on future MEP Advisory Board leadership and membership recruitment, provide insights into cultivating strong Board governance as well as explore ways to expand the MEP Advisory Board's role in regard to the local MEP Center boards.

#### Center Board Outreach Program

- Enhances the strength of relationships between national and local boards.
- Communicates and educates local leaders about the MEP National Network.
- Provides learning opportunities about assigned Centers.
- Questions for board leaders:
  - What are the most important key initiatives being undertaken at the national level and how are these similar to or different from those happening locally?
  - What is the local vision, if any, for manufacturing and how does this integrate with the national vision?
  - What are the best practices that are garnering attention and how might they apply locally?
  - What are some of the most effective forms of advocacy?
  - How can the Board and the local Center become more aligned and informed regarding their respective agendas?
- Discussion on current progress with outreach.
  - Discuss the availability of technology and the openness of the local boards to having outside people attend their meetings.
  - Explore challenges and successes.
  - Discuss how staff can support their efforts.
  - Lay out next steps for the program.
- M. Newman discussed his experience reaching out to Center board leaders as well as attending Center board meetings and encouraged other members to do the same. The Center boards, the Center directors and their staff, NIST MEP staff and MEP Advisory Board members are all ambassadors. He provided Center board chairs with a questionnaire of topics they may want to discuss in advance of meetings. Not only is MEP Advisory Board participation in Center board meetings appreciated, but it offers insight into other areas.

#### The Next MEP National Network Strategic Plan

- Purpose of a Strategic Plan: to provide long-term program direction for the MEP National Network and to unite and align stakeholders, partners, management and staff with this direction.
  - Provides guidance on what to do as well as what NOT to do.

#### Review of the Development and Implementation of the 2017-2022 Plan

- MEP Advisory Board Strategic Planning Working Group.
  - Started to work on update one year prior (March 2016).
  - Board Working Group members:
    - Dave Cranmer, former NIST MEP deputy director.
    - Eileen Guarino, former MEP Advisory Board member.
    - Bernadine Hawes, current MEP Advisory Board chair.
    - Wiza Lequin, NIST MEP.
    - Mike Simpson, NIST MEP.
    - Vickie Wessel, former MEP Advisory Board chair.



- Conducted feedback sessions with several groups of stakeholders (Center directors, Center boards, practitioners and NIST MEP staff).
- Implementation Plan Timeline
  - September 2016-January 2017: Gathered input from the MEP Advisory Board, Center directors, Center boards, staff and partners.
  - January 2017: Drafted implementation plan.
  - February-March 2017: MEP Advisory Board Working Group reviewed implementation plan progress and completed review of implementation plan.
  - March-April 2017: Finalized implementation plan and obtained full MEP Advisory Board concurrence with partner and stakeholder feedback.
  - 2017-2022: Execute implementation plan and review/update throughout life of the plan.

### **Discussion**

- K. Rennels said that with the CLT and the outreach from the Board back to the Centers, the input mechanisms are much more robust than they have been in past years. As a result, the group that takes this on should experience a much more fluid progress.

## **Other Discussion Topics for the Board**

### 2019 MEP Advisory Board Report

- Special thanks to the NIST MEP Marketing and Communications team.
- Report has been sent to the DOC and will be sent along to Congress after a full review.

### Supporting/Mentoring New Board Members

- Three new members on Board and mentoring is appreciated.

### MEP Advisory Board Leadership into 2020

- Bernadine Hawes is leaving the Board.
  - Six years of service to MEP, two years as vice chair, one year as chair.
- Will be looking for new vice chair.

### **Discussion**

- M. Newman asked if the Board is currently able to share the data in the 2019 MEP Advisory Board report as part of their outreach activities. C. Gendron said they can and the MEP Program one-pager contains a useful summation of the report's statistics.

## **Wrap-Up/Public Comments**

### **Public Comments**

- B. Brinkman said this is a big year for the MEP National Network because they are seeing the need for a paradigm change. They have become experts at developing solutions and delivering them to SMMs. The cybersecurity initiative has demonstrated the need for the Network to become a learning organization and become a true network where NIST MEP is one of the important nodes in the manufacturing ecosystem. In order to do that, they will have to invest in Network leaders learning about key strategic topics.
- P. Singerman said that the MEP National Network brand is very important and contrasted MEP National Network with the Small Business Administration's Small Business Development Center

network which is seen as an arm of the federal government and has a recognized national brand. He estimates that MEP is leaving approximately \$25 million on the table due to confusion over the nature of the Centers. This is a major issue that NIST MEP needs to focus on.

### **Concluding Comments**

- J. Wright said the visits of C. Thomas to the members' facilities were very beneficial. Being an MEP Advisory Board member provides an excellent opportunity to see the connection from SMMs in rural areas all the way to the Network. Touring the NIST laboratories and seeing the power and the support behind U.S. manufacturing is energizing and brings home the importance of branding and getting the MEP name out. Several members echoed this comment.
- G. Spottswood said that many rural areas are still suffering from high unemployment and he thanked C. Thomas for her direction to the state Centers to focus on manufacturers in these areas.
- K. Rennels agreed with the effort of moving towards branding as one organization. It is important to remember that everyone in the U.S. is an MEP partner.
- L. Taito said that manufacturers in the U.S. fight very hard to stay in business for the long term. The funds for NIST MEP are spent wisely and expeditiously in the service of ensuring that manufacturing can survive in the U.S. and that it creates wealth. She wanted to make sure the individual Centers are recognized for their work, while also navigating federal, state, customer and employee issues.
- J. Anaya said it is distressing to realize how unknown the Network is amongst the manufacturing sector. Disseminating the information and materials presented by B. Vickery will go a long way in creating awareness.
- K. Heller said that after his first meeting he has learned how much more support is available than he realized. His struggle is in finding qualified people trained to handle complex equipment, but he has found that MEP has several resources available to help.
- M. Newman said NIST MEP has tools available that they need to bring back to the front and repurpose. Wall Street is really pushing a global initiative in sustainability which will be coming down the supply chain. NIST MEP can use this type of initiative to rebrand the tools they have and apply them.
- Several members thanked B. Hawes for her leadership on the MEP Advisory Board.
- C. Thomas said that after losing approximately 70,000 U.S. manufacturers between 2004 and 2009, if another 70,000 were lost America would lose families, communities, national security and our economy. This is a crucial time in U.S. manufacturing. With that in mind, she thanked all of the people working on this important program.
- B. Hawes said her word for this meeting was "remarkable." The new strategic plan is going to be important and must include an enhanced view of workforce development (e.g., giving people skill sets to see a vision and move the country forward through the manufacturing ecosystem). NIST MEP needs to cross American Competitiveness legislation with what they have in their strategic plan. She encouraged the Advisory Board to keep it soft, keep it smart and keep it passionate.

### **Next Meeting**

The next Advisory Board Meeting is set for June 3, 2020 in Tulsa, Oklahoma.

### **Adjournment**

With no further business, B. Hawes adjourned the meeting at 12:37 p.m.