Welcome MAB and Guests to the NIST Campus in Gaithersburg, MD
# Meeting Agenda Details

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:15 a.m.-8:35 a.m.</td>
<td>Board Meeting Opening/Logistics</td>
</tr>
<tr>
<td>8:20 a.m.-8:40 a.m.</td>
<td><strong>Welcome and Introductions</strong></td>
</tr>
<tr>
<td></td>
<td>• Opening Remarks.</td>
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<tr>
<td></td>
<td>• Welcome from NIST MEP Leadership.</td>
</tr>
<tr>
<td></td>
<td>• Board and Audience Introductions.</td>
</tr>
<tr>
<td>8:40 a.m.-9:10 a.m.</td>
<td>MEP Director’s Update</td>
</tr>
<tr>
<td>9:10 a.m.-9:35 a.m.</td>
<td>MEP National Network 2017-2022 Strategic Plan Update</td>
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<tr>
<td></td>
<td>• Board Feedback and Discussion.</td>
</tr>
<tr>
<td>9:35 a.m.-10 a.m.</td>
<td>Presentation: Overview NIST Engineering Laboratory</td>
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<tr>
<td></td>
<td>Dr. Joannie Chin, NIST Engineering Laboratory.</td>
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<tr>
<td></td>
<td>• Board Feedback and Discussion.</td>
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</tbody>
</table>
## Meeting Agenda Details Continued

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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</thead>
<tbody>
<tr>
<td>10:15 a.m. - 10:45 a.m.</td>
<td><strong>Presentation: MEP National Network Branding and Communications</strong>&lt;br&gt;Chancy Lyford, NIST MEP&lt;br&gt;Ben Vickery, NIST MEP&lt;br&gt;- Board Feedback and Discussion.</td>
</tr>
<tr>
<td>10:45 a.m. - 11:35 a.m.</td>
<td><strong>Working Group Update</strong>&lt;br&gt;Supply Chain Development Working Group&lt;br&gt;- Board Feedback and Discussion.</td>
</tr>
<tr>
<td>11:35 a.m. - 12:05 p.m.</td>
<td><strong>Working Group Update</strong>&lt;br&gt;Executive Committee Working Group&lt;br&gt;- Board Feedback and Discussion.</td>
</tr>
<tr>
<td>12:05 p.m. - 12:30 p.m.</td>
<td><strong>Wrap Up and Public Comments</strong></td>
</tr>
</tbody>
</table>
Welcome and Introductions

Bernadine Hawes
MEP Advisory Board Chair

Carroll Thomas
NIST MEP, Director & NIST, Acting, Associate Director for Innovation and Industry Services
Welcome New MEP Advisory Board Members

Donald Bockoven
Fiber Industries LLC

Kevin Heller
Ziegenfelder Company

Dr. Willie E. May
Morgan State University

Introductions Around the Room

1. Name
2. Name of organization
3. How many years involved with MEP
MEP Director's Update

1. MEP Program Budget Outlook / Spend Plan
2. MEP National Network™ Update
3. NIST MEP Updates
MEP Program Budget
Outlook/Spend Plan
MEP Program Budget Outlook
(as of 2/21/2020)

**FY 2020 Appropriation Status**

Proposed for elimination of federal funding in the President’s budget.

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: $ Millions

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Full Year Appropriation</td>
<td>146.0</td>
</tr>
<tr>
<td>Carryover from FY 2019</td>
<td>4.7</td>
</tr>
<tr>
<td>Funding from Other Agencies*</td>
<td>3.4</td>
</tr>
</tbody>
</table>

**Total Available Funding**: $154.1

#### Planned Expenditures: $ Millions

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center Renewals</td>
<td>120.3</td>
</tr>
<tr>
<td>Strategic Competitions</td>
<td>10.6</td>
</tr>
<tr>
<td>Contracts</td>
<td>5.5</td>
</tr>
<tr>
<td>NIST MEP Labor</td>
<td>10.3</td>
</tr>
<tr>
<td>NIST and Program Overhead</td>
<td>7.4</td>
</tr>
</tbody>
</table>

**Total Planned Expenditures**: $154.1

Estimated FY 2020 Efficiency Rate = 10.64%; actual FY 2019 Efficiency Rate = 9.86%.

* Funding from DoD for Strategic Competitions, Contracts and Project Support
MEP National Network Updates
MEP National Network 2017-2022 Strategic Goals

Objective
Assist U.S. manufacturers in embracing productivity-enhancing innovative manufacturing technologies, navigate advanced technology solutions and recruit and retain a skilled and diverse workforce.

Objective
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; and maximize market awareness of the MEP National Network.

Objective
Maximize National Network knowledge and experience to operate 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 a resilient and adaptive U.S. manufacturing base.

Objective
Leverage national, regional, state and local partnerships to gain 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 advances.
MEP National Network Center Leadership Team (CLT)

- **NIST MEP National Network Team Created**
  - Staff of NIST MEP working to coordinate and communicate CLT activities internally.

- **Strategic Group of the CLT met in January in California**
  - Past: Review of output from the last three years.
  - Future: 2020 emphasis on operationalizing the MEP National Network (MEPNN).

- **Direction Forward**
  - Facilitation services through The Clearing
    - Interviews conducted with all 51 Center Directors to gather input on various topics, including their understanding and perspectives of the MEPNN.
  - Alignment among all nodes in the MEPNN.
    - Discuss Go To Centers.
      - Emphasis on cybersecurity.
    - Operationalizing multi-Center client engagements.
Industry 4.0
Advanced Manufacturing for End-to-End Cyber-Physical Connectivity
Activities Across the Network

CLT Committee on Advanced Manufacturing (AM) Technology Solutions helping to clarify tech focus areas, SMM needs, along with CAP project led by OMEP, involving multiple Centers.

AM Technology Services NOFO from NIST closed Feb. 6; NIST anticipates making ~3 funding awards in April to accelerate MEP Center service delivery in Industry 4.0.

MEP National Network Industry 4.0 WG established with participation from several dozen MEP Centers to share best practices; facilitated by NIST MEP.

MEP Centers utilizing user / demonstration facilities and continuing to collaborate with Manufacturing USA Institutes.
NIST MEP Extension Services
In Support of the MEP National Network

• Food Industry Services
  - Food safety continues to drive MEP Center services for small US food manufacturers.
  - 5 active CAP projects developing Center approaches (GA, MO, MT, NJ, PR).
  - National partnerships with US Food and Drug Administration and Food Safety Preventive Controls Alliance; also collaborating with Global Food Safety Initiative.
  - MEPNN WG sharing best practices among MEP Centers.

• MEP-Assisted Technology and Technical Resource (MATTR)
  - Connecting Small Manufacturers with NIST Labs.
  - >40 MEP Center clients from ~20 Centers connected with NIST Lab expertise and technical resources to address client metrology and product/process development issues.
  - MEPNN WG operating to continue developing MATTR as an MEP Center service.
  - NIST MEP facilitating CRADAs between MEP Center clients and NIST Labs, and compensating NIST Labs, as warranted by MATTR opportunities.
Cybersecurity Practice Developing Across the Network

MEP National Network Cyber Working Group sharing best practices among Centers. (49 Centers currently participating)

Cyber for Defense Manufacturing Award from NIST MEP to MMTC (MI MEP Center) focused on awareness, assistance for >1,000 defense contractors, with participation from >30 MEP Centers.

- >225 Awareness / training events
- >3,400 SMMs served since 2017
- ~78,000 NIST Handbook 162 downloads since 2017
- >900 projects conducted since 2015
NIST MEP Updates
New Deputy Director
Welcome Dr. Robert W. Ivester

- Currently serves at DOE as the Director of the Federal Energy Management Program (FEMP) in the Office of Energy Efficiency and Renewable Energy.
- Served in Advanced Manufacturing Office (AMO) for six years.
- Spent more than 16 years at NIST, leading and performing research in advanced manufacturing.
Carroll Thomas
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 3 NIST bldgs. since Nov. 2018 departure from bldg. 301.
- Fall 2020 target timeframe for return to 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 OFPM in Feb. 2020.
  - Will address ongoing issues for NIST MEP as needed according to OFPM office space renovation project schedule.
    - Including networking, printers, copiers, furniture, etc.
Discussions & Questions

You may also email Cheryl Gendron at Cheryl.Gendron@NIST.gov or call 301-975-2785.
Strategic Plan Update
null
1. Consensus Within Integrated National Network

Reach Network consensus on definition of Project and CME (client manufacturing establishment) interaction.

2. Center and Program Office Operational Excellence

Operationally improve reporting via measurement of on-time and accurate reporting.

3. Increase Projects and New Clients

Increase reported projects by 10% and reported new clients by 5%.

4. 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
- Q4 2019: 14,828
- Goal: 15,520

Goal: Increase New Clients by 5%
- Baseline: 4,101
- Q4 2019: 4,345
- Goal: 4,306
18 Month Measures of Success

Goal: Improve On Time Reporting Measurement.

- Four elements measured:
  - Progress plan.
  - Progress data.
  - Clients/projects.
  - Survey confirmation.

- Baseline (Q2 2019):
  - 40 Centers reported on time with first 3 elements.
  - 24 Centers reported on time across all four elements.

- Progress to Date (Q4 2019):
  - 38 Centers reported on time with first 3 elements.
  - 23 Centers reported on time across all four elements.

Goal: Definitional Consensus.

- Define:
  - Client / project.
  - Client manufacturing establishment interaction.

- Working group of Center Directors being established.
# 18 Month Measures of Success

Goal: Amplify and Measure Network Brand Awareness by at Least 10%.

<table>
<thead>
<tr>
<th>Brand Measure</th>
<th>Goal</th>
<th>Baseline</th>
<th>Progress To Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backlinks</td>
<td>114</td>
<td>104</td>
<td>TBD</td>
</tr>
<tr>
<td>Brand Mentions</td>
<td>138</td>
<td>125</td>
<td>TBD</td>
</tr>
<tr>
<td>Manufacturing Innovation Blog Subscribers</td>
<td>27,412</td>
<td>24,920</td>
<td>TBD</td>
</tr>
<tr>
<td>Social Media Followers</td>
<td>17,864</td>
<td>16,240</td>
<td>TBD</td>
</tr>
<tr>
<td>#MEPNationalNetwork Hashtag Occurrences</td>
<td>367</td>
<td>334</td>
<td>TBD</td>
</tr>
</tbody>
</table>

Discussions & Questions

You may also email Cheryl Gendron at Cheryl.Gendron@NIST.gov or call 301-975-2785.
 Advisory Board Featured Presentations
NIST Engineering Laboratory Overview

Dr. Joannie Chin
NIST
Deputy Director, Engineering Laboratory
Overview of the NIST Engineering Laboratory

March 3, 2020
NIST Laboratory Programs

- Material Measurement Laboratory
- Physical Measurement Laboratory
- Engineering Laboratory
- Information Technology Laboratory
- Communication Technology Laboratory
- Center for Nanoscale Science and Technology
- NIST Center for Neutron Research
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.

- **measurement science**
  Creating the experimental and theoretical tools – methods, metrics, instruments, and data – that enable innovation.

- **standards**
  Disseminating physical standards and providing technical expertise to documentary standards that enable comparison, ensure interoperability, and support commerce.

- **technology**
  Driving innovation through knowledge dissemination and public-private partnerships that bridge the gap between discovery and the marketplace.
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 Multi-hazards
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
Objective: To enable scalable, dependable and reproducible performance measurement of reliable, resilient, safe, secure, and privacy-enhancing cyber-physical systems.

- Cyberphysical Systems
- Smart Grid
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
Fire protection, fire physics, materials flammability

Structural analysis, disaster and failure studies

Intelligent sensing, control, robotics and automation

Sustainability, durability, and service life prediction of engineered materials

Building and renewable energy, indoor environment, and building systems performance measurement

Systems integration, information modeling, model-based engineering
Net-zero Energy Research Facility

National Fire Research Laboratory
Metal Additive Manufacturing Research Center

Additive Manufacturing Metrology Testbed
Manufacturing Robotics and Response Robotics Facilities
Intelligent Building Agents Lab

SPHERE
TechSolve (OH MEP)
To create publicly-available guidelines for merging multiple data sources that support maintenance activities.

Testbed Experiment
- Sensor data
- Machine controller data
- Human generated data

Event Analysis

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.
EL-MEP Collaborations

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 member companies nationally.

FuzeHub (NY MEP) – To pilot a test method that identifies and isolates sources of robot workcell health degradation in multiple manufacturing facilities to produce deployment guidance.
NIST MEP – co-led a workshop to understand the current state of adoption of collaborative robotics within the SMM community

Catalyst Connection (PA MEP) - facilitated visits to SMMs by NIST robotics program personnel

Participation of multiple state MEPS & SMMs – CMTC (CA MEP), Genedge (VA MEP), Ludowici (OH SMM), Mantec (PA MEP), Manufacturer’s Edge (CO MEP), MSU CAVS-E (MS MEP), TechSolve (OH MEP), and Trividia Health (FL SMM) in standards meetings, technical conference panels, and NIST-led workshops
Discussions & Questions

You may also email Cheryl Gendron at Cheryl.Gendron@NIST.gov or call 301-975-2785.
Break
MEP National Network Branding and Communications

Ben Vickery
NIST MEP
Manager, Marketing & Communications Group
Building the MEP National Network Brand
Brand Initiative Background

• MEP Centers identified 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.
Internally Building and Strengthening the Brand
Implementing the Brand: Internal Tools

- Brand Implementation Kit.
- Co-brandable marketing materials / sell sheets.
- Social media and content curation kits.
- Where to find these materials.
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.

Two components:

- Center Educational Materials.
- Client-Facing Materials.
Center Educational Materials

- PowerPoint Presentation.
- “When to Network” Flyer.
- Network Directory.
Explains the Network, its value, and how Centers can represent the national organization.

The MEP National Network™ is a unique public-private partnership that delivers comprehensive, proven solutions to U.S. manufacturers, fueling growth and advancing U.S. manufacturing.

Focused on helping small and medium-sized manufacturers generate business results and thrive in today’s technology-driven economy, the MEP National Network comprises the National Institute of Standards and Technology’s Manufacturing Extension Partnership (NIST MEP), the 51 MEP Centers located in all 50 states and Puerto Rico, and over 1,400 trusted advisors and experts at more than 375 MEP service locations, providing any U.S. manufacturer with access to resources they need to succeed.
Discussions with clients will often focus on local concerns you are equipped to assist on your own. However, there are a number of scenarios where it is to your advantage to advise them that you are part of the National Network:

1. To let them know you have the backing of a larger organization.

2. To help coordinate projects across state lines (e.g., supply chain).

3. 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.

This is updated as Center information changes.
Client-Facing Materials

- PowerPoint Slides.
- Marketing Sheet.
- Email Content.
The MEP National Network developed 18 slides that outline statistics and Network benefits for your potential clients.

You can incorporate these slides (or just the content) into presentations you deliver to your clients.

The slides and their content are easy to copy and paste and alter to align with your Center’s brand guidelines.
A co-branded marketing sheet was designed so Centers can introduce their affiliation with the MEP National Network.

The sheet is an editable 2-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 Communications

An outbound email was drafted that introduces the MEP National Network and its value to potential clients.

Version this as you see fit. It was written as text-only so Centers can incorporate it into their own templates or email marketing program.
Co-brandable Marketing Materials or Sell Sheets for Specific Services or Programs
Social Media and Content Curation Kits

THE MEP NATIONAL NETWORK SOCIAL MEDIA KIT

THE MEP NATIONAL NETWORK CONTENT CURATION KIT
Where to Find these Materials

https://mic.nist.gov/Pages/National-Network-Brand.aspx
About the MEP National Network™ Brand

There are 51 MEP Centers with separate recognizable to collective MEP National Network is and the value that we bring the manufacturing community. Working together with Center representatives, we have seen the MEP National Network brand as a co-brand with the local MEP Center. Building a cohesive MEP National Network brand identity allows for more manufacturers to strengthen communications, and ultimately, helps drive success.

The MEP National Network is the only private-public partnership that is accessible within a few hours of manufacturers across the U.S. It is time for us to tell our story.

Current Brand Documents:
- 2019 MEPNN Brand Handbook
- Brand Handbook Presentation
- Brand Handbook Webinar
- Brand Handbook Webinar Take 2
- 2019 Communicating About the MEPNN Brand
- MEP National Network Comms Guide
- 2020 MEP National Network Overview.pptx
- MEPNN Brand Implementation Kit_August 2019.zip
- MEPNN Content Curation Kit
- MEPNN Social Media Kit CS19
- Updating Your Email Signature
- Updating Your Website

Logo Files:
- MEP National Network Brand Logos for Print
- MEP National Network Brand Logos for Web

Customizable Marketing Templates:
- MEPNN FY 2019 Impacts Overviewcobrand 2.zip
- MEPNN CMHC Overview.zip
- 2020 MEPNN Cybersecurity Guide Cobranded.zip
- MEPNN_Lean Manufacturing_Sell Sheet_June 2019.zip
- MEPNN_Food Industry_Sell Sheet_June 2019.zip
- MEPNN_Cybersecurity Dfars_Sell Sheet_June 2019.zip
- MEPNN_Toyota Kata_Sell Sheet_2020 with Impacts.zip
- MEPNN_MATTR_Oct_2019 Folder.zip
- MEPNN_Cybersecurity Framework_July 2019 Folder.zip
- MEPNN Medically_Cert_Sell Sheet_August 2019.zip
- MEPNN_Quality_Sell Sheet_June 2019 2.zip
- MEPNN_ExportTech Overview 2.zip

Background Research & Past Plans:
- Brand Research Report (Nov 16)
- Brand Standing Workshop 9/2017
- Marketing Plan Overview Presentation Slides (Oct 2017)
Externally Building and Strengthening the Brand
Implementing the Brand: External Tools

- Trade Publications
- Social Media
- Events
- Earned Media
## Sponsored Content - Trade Media Partners

<table>
<thead>
<tr>
<th>Industry Week</th>
<th>Industry Today</th>
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</thead>
<tbody>
<tr>
<td>One of the most respected manufacturing publications, Industry Week publishes news and articles about best practices.</td>
<td>Industry Today’s audience is decision makers at manufacturing and industrial companies.</td>
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</tbody>
</table>

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<thead>
<tr>
<th>Quality Digest</th>
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<tbody>
<tr>
<td>A quality-focused publication that publishes content by industry experts on international quality standards. It has an editorial track specifically devoted to Lean practices and often re-publishes NIST MEP blog content on its own initiative.</td>
</tr>
</tbody>
</table>
Leveraging Your Data As a Foundation for Manufacturing ROI

Data and analysis don’t have to be complicated to yield bottom-line benefits.

4 Ways Robots Deliver ROI to Small and Medium-Sized Manufacturers

According to the International Institute for Analytics, businesses that use data will gain $4.2 trillion in productivity benefits over competitors who aren’t using data by 2020. As an industrial engineer for the Northeastern Pennsylvania Industrial Resource Center, part of the MEP National Network, I tell small-business owners and manufacturers that this quote does not say you...
Tradeshow Presence

Manufacturing & Technology

April 1-3, 2019
David L. Lawrence Convention Center
Pittsburgh, PA USA

Special thanks to our partners!

MEP National Network Way

PA MEP PENNSYLVANIA MANUFACTURING EXTENSION PARTNERSHIP

MEP National Network™
Social Media

**Twitter**
6,962 followers

**LinkedIn**
Group: 1,422 members
and a Showcase Page

**Facebook**
9,520 followers

Data as of Feb. 28, 2020
Post Reach and Engagement

Posts with the Most Engagement & Highest Reach Utilizing the #MEPNationalNetwork Hashtag
(Number of impressions, people reached, reactions, shares and comments)

FY20 Q1

5,483 Impressions;
Total Engagement: 47
12 likes, 9 retweets,
7 profile clicks, 1 reply

Join the “Cybersecuring The Supply Chain – Make Cybersecurity A Competitive Advantage webinar”...

1,400 People Reached;
Total reactions, comments, shares: 92;
Total engagements: 238; 64 likes;
13 comments; 15 shares

545 Impressions;
9 reactions;
1 comment; 8 shares

Cincinnati Crane & Hoist was the victim of a cyberattack in 2017 through a spearfishing campaign...

Cincinnati Crane & Hoist was the victim of a cyberattack in 2017 through a spearfishing campaign...
Social Media Campaign: Meet the Network

MEET THE MEP NATIONAL NETWORK™

Introducing
Diana Martinez, Ph.D.
Business Advisor and Lean Six Sigma Master Black Belt
13 Years in Manufacturing Industry

TMAC
Work Smart. Grow Smart.™

PART OF THE MEP National Network™
The MEP National Network: A Public–Private Partnership That’s All About Boosting U.S. Manufacturing

American manufacturing has been on a steady growth streak for years now, but that wasn’t always the case. Back in the middle to late 1980s, U.S. industry was mired in a long, severe slump, and had been shedding plants and workers since the 1970s.

From Prototype to Product, with Plenty of Guidance

Nuclear Sensors Startup Gets an MEP Boost.
Discussions & Questions

You may also email Cheryl Gendron at Cheryl.Gendron@NIST.gov or call 301-975-2785.
MEP Advisory Board
Working Group Updates
Supply Chain Development Working Group

• Committee Members
  – Board Leadership
    • Matthew Newman
  – Board Members
    • LaDon Byars, Bernadine Hawes, Mary Isbister, Chris Weiser
  – NIST MEP Support
    • Dave Stieren, Mark Schmit

• 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

MEP National Network supports DoD Supply Chains in many areas, highlighted by:

- Cybersecurity awareness and assistance.
- Working with DoD in technology transfer / transition involving defense manufacturing suppliers.

NIST MEP seeks ongoing Advisory Board perspectives on these MEP National Network focus areas, approaches, challenges
MEP National Network Cybersecurity

February 2020

MEP National Network cybersecurity assistance for small manufacturers 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.
78% in supply chain attacks last year

“Supply chain attacks are the type of cyber attack that looks for an opening into a network through the supply network, which is notorious for its lack of security. Malware statistics show that these are on the rise in all industries, so making sure your suppliers keep their online databases safe is a must.”

Source: Symantec

Every 39 Seconds

A Clark School study at the University of Maryland is one of the first to quantify the near-constant rate of hacker attacks of computers with Internet access — **every 39 seconds on average**, affecting one in three Americans every year — and the non-secure usernames and passwords we use that give attackers more chance of success.

Cyber Risk Assessments Need Improvement

Almost one-third of manufacturers have not performed cyber risk assessments specifically focused on the industrial control systems operating on their shop floors, resulting in a potentially significant risk to their operations.

Source: Cyber risk in advanced manufacturing, Deloitte and MAPI
The MEP National Network has made significant progress ... and continues to move forward addressing important needs.
MEP National Network Progress: Cybersecurity Assistance Practice

February 2020

>3,400 Small Manufacturers served by MEP Centers Nationwide.

~225 Awareness & Training Events conducted by MEP Centers Nationwide.

958 cybersecurity projects conducted for U.S. manufacturers by MEP National Network since 2015.

Expanding capabilities across the Network

NISTIR 7621 “Small Business Information Security: The Fundamentals,” has also been downloaded over 163,000 times since publication by Pat Toth, NIST MEP, in Nov 2016.
MEP National Network Progress: Cybersecurity Assistance Practice
February 2020

- 12 MEP Centers have received ~$15M OEA funding, focused on working with state-based organizations.
- Focus on cyber workforce training and education.
- NIST Handbook 162 downloaded ~78,000 times since Nov 2017 NIST MEP publication.
- Pat Toth, NIST MEP, author.

MEP NN Cybersecurity Working Group (WG) meets every 6 weeks.
WG face-to-face mtg in Orlando, May 2020.
Highlights: MEP Cybersecurity and the DoD


• National Network award, led by MI MEP, to provide nationwide cybersecurity awareness, hands-on technical assistance, and pilot operational technology (OT) protections.
  – Collaborating with NIST Labs.
  – Collaborating with MxD Manufacturing USA Institute in Chicago.

• MEP Center participation from >30 states, in addition to MI:
  – AL, CA, CO, CT, DE, FL, GA, ID, IL, IN, KS, KY, LA. MA, MD, MO, MS, NC, NJ, NY, OH, OK, OR, PA, RI, SC, TN, TX, WA, WI, WV.
Highlights: MEP Cybersecurity and the DoD

National awareness for defense contractors

Event schedule

<table>
<thead>
<tr>
<th>Area</th>
<th>Region</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michigan, Indiana, Ohio</td>
<td>MW</td>
<td>11/22/2019</td>
</tr>
<tr>
<td>Long Island, New York</td>
<td>NE</td>
<td>12/5/2019</td>
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<tr>
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<tr>
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<td>Nat'l</td>
<td>3/16/2020</td>
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<tr>
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<tr>
<td>Washington, Oregon, Idaho</td>
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<td>4/22-23/20</td>
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<tr>
<td>Mississippi (Special event)</td>
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Highlights: MEP Cybersecurity and the DoD

- Hands-on MEP Center technical assistance to defense contractors.
  - Defense contractors to receive comprehensive, hands-on technical assistance from MEP Centers to prepare for DFARS compliance; assistance underway.
  - Companies located in CA, CO, CT, FL, IL, MD, NC, OR, PA, TX, VT.
  - DoD supply chains represented by these companies include: aerospace, air defense, satellite tracking, electronics, energy systems and batteries, energetics, solider systems, fire protection, nuclear propulsion, et.al.
  - Manufacturing processes conducted by these companies include machining, additive manufacturing, electronics processing, composites manufacturing, optics manufacturing, packaging, industrial automation, et.al.
Highlights: MEP Cybersecurity for Defense Manufacturing and the NIST Laboratories

- MEP Centers, NIST MEP working with NIST Labs to develop new NIST Cybersecurity Framework Manufacturing Profile Implementation Guidance.
  - MEP Center clients from MI and IN have been assessed against NIST CSF Manufacturing Profile to generate use cases for NIST Labs to produce next iteration of Manufacturing Profile Implementation Guidance.
  - NIST Lab activities funded by NIST MEP under NIST MEP – OUSDR&E IAA.
  - Implementation Guidance from NIST Labs will:
    - Address operational technology (OT) vulnerabilities specific to manufacturing operations that are not covered by DFARS cybersecurity requirements.
    - Be pilot implemented at the 2 participating manufacturers.
New DoD Cybersecurity Maturity Model Certification (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.
New DoD Cybersecurity Maturity Model Certification (CMMC) Program

- 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 Orgs Summer 2020.
- New DFARS rule on CMMC June 2020.
- RFI for 10 “pathfinder” contracts June 2020.
- RFPs for 10 “pathfinder” contracts September 2020.
- Full implementation by 2026.
Technology Transfer and Transition Support for DoD

MEP National Network supporting:

- Small manufacturer participation in new regional innovation initiatives called Tech Bridges that are being established by the Navy around the U.S.
- Technology insertion for Navy shipbuilding.
MEP and NavalX Tech Bridges

- NavalX established in Feb. 2019.
  - Creation of Tech Bridges to connect and sustain acceleration ecosystems for Navy needs in off-base Navy locations around U.S.
  - Tech Bridges partnering with start-ups, academia, corporations, small businesses, non-profits, private capital, government entities.
  - Tech Bridges 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 small U.S. manufacturers.
  - Tech Bridges currently in RI, SC, FL, IN, CA, and WA.
  - Other Tech Bridges being considered, including DC/VA/MD, VA, HI, others.
  - Polaris MEP (RI) out in front – thanks, Christian Cowan.
  - NIST MEP negotiating national partnership with Office of Naval Research for execution in 2020 to engage and fund MEP Center efforts in Tech Bridge activities.
MEP and Navy Shipbuilding

  - 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, VA.
  - Current MEP Center tasking led by GENEDGE Alliance (MEP Center in VA).
  - 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.
Executive Committee Working Group

• Committee Members
  – Board Leadership
    • Bernadine Hawes, Chair of MEP Advisory Board
    • Matt Newman, Vice-Chair of MEP Advisory Board
  – Board Members
    • Mitch Magee
    • George Spottswood
    • Pat Moulton
  – NIST MEP Support
    • Carroll Thomas, Cheryl Gendron, Phill Wadsworth, Wiza Lequin

• 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

- Enhance **strength of relationships** between national and local boards.
- Communicate and Educate local leaders about the MEP National Network.
- Learn about your assigned Centers.
## Strategic Plan Mapped To National Network

### Empower Manufacturers
- **Primary**
  - 51 Centers/CLT

- **Collaborative Support**
  - Extension Services

- **Important Support**
  - NIST MEP Leadership
  - R&S Partnerships
  - Network Learning & Comp
  - M&C
  - PEER
  - FM/Center Ops
  - Admin
  - IT/Security

### Champion Manufacturing
- **Primary**
  - 51 Centers/CLT
  - NIST MEP
  - Extension Services
  - M&C
  - R&S Partnerships
  - NIST MEP Leadership

- **Collaborative Support**
  - ASMC/FORME
  - Advisory Board
  - Center Boards

### Leverage Partnerships
- **Primary**
  - 51 Centers/CLT
  - NIST MEP
  - Extension Services
  - M&C
  - NIST MEP Leadership
  - R&S Partnerships

- **Collaborative Support**
  - Advisory Board
  - ASMC/FORME
  - PEER

### Transform the Network
- **Primary**
  - 51 Centers/CLT
  - NIST MEP (All)

- **Collaborative Support**
  - Advisory Board
  - Center Boards
  - ASMC/FORME

- **Important Support**
  - Admin
  - FM/Center Ops
  - IT/Security
  - Staff Resource Mgmt
Center Board Outreach into Action

• 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 MAB 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 can staff support your efforts.
  – Layout next steps for the program.
New Working Group Discussion: The Next Strategic Plan

Why have a Strategic Plan?

**Purpose** - to provide long-term, program direction for the MEP National Network and to unite and align stakeholders, partners, management and staff with this direction.

*Provide guidance on what to do as well as what **NOT** to do.*
The Development 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.
  - Vickie Wessel, former Board Chair
  - Bernadine Hawes, MEP Board member
  - Eileen Guarino, former MEP Board member
  - Dave Cranmer, former NIST MEP Deputy Director
  - Mike Simpson & Wiza Lequin, NIST MEP staff

- Conducted feedback sessions with several groups of stakeholders. (CD, Ctr Boards, practitioners, NIST MEP staff and RFI)
Implementation Plan Timeline

- **Sept. 2016 - Jan. 2017**
  - Gathered input from the MAB, Center Directors, Center Boards, staff and partners.

- **Jan. 2017**
  - Drafted implementation plan.

- **Feb.-Mar. 2017**
  - MAB working group reviewed implementation plan progress – 3/2/2017.

- **Mar.-Apr. 2017**
  - Finalize implementation plan.
  - Obtain full MAB concurrence, and partner and stakeholder feedback; April 15.

- **2017-2022**
  - Execute implementation plan.
  - Review and update throughout life of the plan.
Other Discussion Topics for the Board

• 2019 MEP Advisory Board Report
  – Special thanks to the NIST MEP M&C team - especially to Katie Rapp.
  – Timeline/sharing the report.

• Supporting/mentoring new members
  – Three new members onboard.

• MEP Advisory Board leadership into 2020
Bernadine

Thank you

6 Years of service to the MEP Program
2 Years as Vice Chair 2017-2018
1 Year as Chair 2019-2020
Future Meeting Schedule

2020

Wednesday, June 3, 2020*
Tulsa, OK
Tour and Board Dinner: Tuesday, June 2, 2020
Additional details to follow.

Tuesday, Sept. 22, 2020*
Phoenix, AZ
In conjunction with the MEP National Network Update
Meeting and FORME Best Practice Conference
Associated Events throughout the week.

*Timing Subject to Change.
Discussions & Questions

You may also email Cheryl Gendron at Cheryl.Gendron@NIST.gov or call 301-975-2785.
Meeting Wrap Up

You may also email Cheryl Gendron at Cheryl.Gendron@NIST.gov or call 301-975-2785.
Thank You

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