

**National Institute of Standards and Technology  
Manufacturing Extension Partnership  
Advisory Board  
Minutes of the March 5-6, 2024 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 10:01 a.m. to 4:01 p.m. on March 5, 2024 at the Marriott Washingtonian Center in Gaithersburg, MD, and from 9:00 a.m. to 11:49 a.m. on March 6, 2024 at the Commerce Research Library in Washington, DC. The meeting had 61 attendees, including Board members, NIST and NIST MEP staff, participants from MEP Centers, guest speakers and observers. Beverly Bobb is the Designated Federal Officer for the MEP Advisory Board.

## **Attendees**

### **Board Members**

Donald Bockoven, Vice Chair MEP Advisory Board and CEO, Fiber Industries LLC  
Winston Chang, CTO, Snowflake Inc.  
Dr. Jermaine Ford, President, Florence-Darlington Technical College (Day 1)  
Louis Foreman, CEO, Enventys Partners (Day2)  
Gail Friedberg Rottenstrich, Co-Founder and CEO, Zago Manufacturing Company, Inc.  
Michael Garvey, President and CEO, M – 7 Technologies  
Bernadine Hawes, Chair, MEP Advisory Board and Senior Advisor, Econsult Solutions, Inc.  
Sean Ketter, Vice President, Oshkosh Corporation  
Miriam Kmetzo, Executive Vice President, Welding Technology Corp  
Dr. Annette Parker, President, South Central College  
Candice Smith, Director of Enterprise Engineering, The Boeing Company  
John Smith, CEO, Wood-Mizer Holdings, Inc.  
Tyrome Smith, Director of Partnerships, The Common Mission Project  
David Vasko, Industry Consultant, NIST

### **NIST MEP Participants**

Nathan Ginty, MEP Division Chief of National Platforms Division  
Jyoti Malhotra, MEP Division Chief of National Programs  
Pravina Raghavan, MEP Director  
G. Nagesh Rao, MEP Deputy Director

### **Guest Speakers**

Mojdeh Bahar, Associate Director for Innovation and Industry Services, NIST  
Quincy Brown, Director of Space STEM and Workforce Policy in the White House, National Space Council  
Kevin Carr, FloridaMakes Center Director (Florida MEP)  
Tony Fernandez, New Hampshire MEP Center Director  
Beatriz Gutierrez, CONNSTEP Center Director (Connecticut MEP)  
Ethan Karp, Ohio MEP Sub-Recipient, MAGNET Center Director  
Phil Mintz, North Carolina MEP Center Director

Secretary Gina Raimondo, U.S. Department of Commerce  
Ingrid Tighe, Michigan MEP Center Director

**Observers**

Nicole Ausherman, NIST MEP  
Melissa Ayala, NIST MEP  
Steve Black, UTAH-MEP  
Beverly Bobb, NIST MEP  
Buckley Brinkman, WCMP  
Jose Colucci, NIST MEP  
Nadine DeJesus, NIST MEP  
Scott Dockum, NIST MEP  
Bill Donohue, Genedge  
Barbara Fernandez, CONNSTEP  
Fizie Haleem, Montgomery College WDCE  
Bryana Head, NIST MEP  
Carrie Hines, Foundation for Manufacturing Excellence (FORME)  
Mike Kelleher, Maryland MEP  
Graham Koester, Neal R. Gross & Co., Inc.  
Brian Lagas, NIST MEP  
Gabriel LaMois, Genedge  
Wiza Lequin, NIST MEP  
Kathie Mahoney, MassMEP  
Petra Mitchell, Catalyst Connection  
Katie Rapp, NIST MEP  
Rikki Riegner, PA MEP  
Angelina Rivera, NIST MEP  
Jennifer Rosa, NIST MEP  
Mark Schmit, NIST MEP  
Carol Shibley, NIST MEP  
Julia Shriner, NIST MEP  
Sevan Simonian, NIST MEP  
Michael Taylor, NIST MEP  
Nico Thomas, NIST MEP  
Zoraida Velasco, FloridaMakes  
Marlon Walker, NIST MEP  
Thomas Williams, NIST MEP

**Welcome and Introductions**

**Speakers:**

Pravina Raghavan, MEP Director  
Bernadine Hawes, Chair, MEP Advisory Board  
Donald Bockoven, Vice Chair, MEP Advisory Board

B. Hawes called the meeting to order and welcomed all of the Board members, MEP Staff, and the Board's invited guests to Washington D.C. P. Raghavan introduced Beverly Bobb to brief the Board on the guidelines for the meeting, as set forth in the Federal Advisory Committee Act (FACA). P. Raghavan reviewed the agenda for the next 2 days and then turned the meeting back over to the Chair to begin

introductions. Board members and staff introduced themselves and B. Hawes welcomed the 3 new Board members: Dr. Jermaine Ford, Winston Change, and Candice Smith. B. Hawes also acknowledged the 3 Board members who were unable to attend: Beth Bafford, Christopher Matthews, and Pat Moulton. P. Raghavan introduced Mojdeh Bahar, the NIST Associate Director for Innovation and Industry Services, to provide a briefing on Innovation and Industry Services.

## Briefing from Associate Director of Innovation and Industry Services

### Speakers:

Mojdeh Bahar, NIST, Associate Director, Innovation and Industry Services

NIST's Strategic Priorities and their connection with MEP's mission

- Critical and Emerging Technology Leadership
  - Artificial Intelligence
  - Bio Economy
  - Cybersecurity and Privacy
  - Advanced Communications
  - Quantum Information Science
- Standards Leadership
- Manufacturing Leadership
- Mission Delivery Enhancement
- NIST Community

Bio Economy

- MEP assists medical device supply chain manufacturers within the U.S. to prepare for and to achieve MedAccred accreditation.

Cybersecurity and Privacy

- While NIST is focused on developing resources and sharing best practices to help industry, MEP Centers work closely with manufacturers to help them address cybersecurity challenges.
  - Small and medium sized manufacturers are often more vulnerable to cyber-attacks.
- MEP Experts help manufacturers understand what practices, relevant standards, and regulations are critical to their businesses' success.

Standards Leadership

- MEP does not make standards, however MEP Centers work with companies that seek to adhere to quality management standards like ISO 9001 and other relevant standards that can impact their products, processes, and market access.
- Science and technology standards
  - Technical standards keep people safe
  - Enable technology to advance
  - Help businesses succeed

Manufacturing Leadership

- NIST has a proven track record in delivering useful tools and technical assistance that existing manufacturers and aspiring startups need.
- Timely technical assistance from NIST can help the nation's manufacturers to invent, innovate and create new products and services more rapidly and efficiently than their global competitors.

- In addition to the MEP program, NIST efforts include laboratory programs focused on developing the next generation of advanced manufacturing technologies.
- MEP's MATTR and MATTR+ programs allow MEP to serve as a bridge between small and medium sized manufacturers and NIST laboratories.

### Supply Chain

- SCOIN aligns with the National Strategy for Advanced Manufacturing and MEP's strategic priority to mitigate supply chain vulnerabilities.
- Through SCOIN, MEP is working with the entire supply chain ecosystem. This will result in high-performing supply chains that collaborate through multiple tiers, creating the capability to develop, manufacture, and distribute new or improved products more rapidly.
- Outreach to OEMs and small and medium-sized manufacturers is being conducted to broaden industry knowledge and educate them on the benefits of using the MEP National Network and its supplier scouting services.
- In February 2024, the MEPNNS Supplier Scouting service had 29 new opportunities opened:
  - 6 items from government agencies (1 state agency and 5 federal agencies)
  - 14 items from MEP Centers
  - 9 items from private entities
    - 36 previously opened opportunities were made available to the Network.

### NIST Community

- NIST fosters a culture of collaboration and inclusivity by encouraging employees to:
  - Work across organizational boundaries
  - Share ideas
  - Leverage diverse perspectives to address complex scientific and technological challenges.
- MEP collaborations with Manufacturing USA and the Baldrige program, particularly the Job Quality Toolkit, are directly related to the One NIST goal.

### Job Quality Toolkit

- Job quality is a combination of key drivers that are important to each worker's overall employment experience.
- The Job Quality Toolkit is rooted in the Baldrige Excellence Framework and is an actionable tool that organizations can use to improve the quality of the jobs they offer.
- MEP, in collaboration with Baldrige, developed a Job Quality Online Assessment.
  - The assessment has been completed by over 90 companies to date. Of these 90 companies, 58% have engaged with their local MEP Centers to help address their workforce needs.

### Manufacturing USA

- MEP is actively developing partnerships across NIST, and with Manufacturing USA institutes, various federal agencies, and other stakeholders to further its work.
  - In some cases, these partnerships are formalized through a memorandum of understanding (MOU).
- MEP is currently collaborating with 16 Manufacturing USA institutes:
  - MEP and CESMII, the smart manufacturing institute, are working together. CESMII has agreed to waive membership fees for all 51 MEP Centers.
    - MEP is working on an MOU focusing on smart manufacturing for energy and adjacent sectors.
  - MEP and CYMANII, the cybersecurity institute, are exploring the intersections of cybersecurity in manufacturing. They are also discussing a possible MOU focusing on cybersecurity.

### Additional Partnerships

- MEP is focused on building and strengthening relationships outside of NIST as well. Partnerships are vital for advancing U.S. manufacturing at the state, regional, and national levels.
- At the national level, NIST MEP focuses on developing partnerships with federal agencies, national laboratories, and trade organizations. This effort has resulted in many new collaborations:
  - Department of Energy
  - United States Patent and Trademark Office
- MEP is also deepening ties with organizations such as:
  - Department of Transportation
  - Food and Drug Administration
  - National Science Foundation
  - Economic Development Administration
  - Association of Procurement Technical Assistance Centers
  - Minority serving institutions
  - National laboratories
- NIST MEP is currently finalizing MOUs with:
  - DOE, USPTO, APTAC, and DOT
- NIST MEP also participates in the Auto Communities Policy and Implementation Sub-Interagency Policy Committee to assist manufacturers transitioning from internal combustion engine (ICE) to electric vehicle (EV) manufacturing.
- NIST MEP has also been collaborating with DOC's International Trade Administration, sharing market data and providing briefing information to the Advisory Committee on supply chain competitiveness.

### Interactive Map

- MEP is working on many initiatives in line with NIST priorities and MEP strategic goals.
- The MEP National Network Workforce Programs, Services, and Trainings interactive map launched in September 2023 on the NIST MEP public website. This interactive map provides a guide to the wide range of workforce-related programs offered by all 51 MEP Centers.
  - It enables manufacturers to easily locate and access these services, which address every stage of the employee lifecycle.

### Discussion

- D. Vasko asked if they could request all institutes to provide free memberships to help leverage collaborations in order to build them out. M. Bahar said it was worth asking and some institutes might be more willing than others because they have more knowledge of the MEP network or they have engaged with it. The goal is to raise awareness about the MEP network so institutes will be more likely to offer free membership.
- D. Vasko asked for clarity regarding IP ownership when MEP institutes partner with Manufacturing USA and asked if there was a universal IP agreement. M. Bahar explained that different industries have very IP models, so each institute has its own IP model and then under that in each project the companies negotiate their IP, but in no case should a company be losing their IP.

## Director's Update

### Speakers:

Pravina Raghavan, MEP Director

### New NIST MEP Team Members

- Division 481 – Network Agreements Management
  - Bryana Head, Competitions Management
- Division 483 – National Programs
  - Justin Muldrich, General Engineer
- Division 484 – National Platforms
  - Nathan Ginty, Division Chief National Platforms
  - Angelina Rivera, Supply Chain Group Manager
- Division 486 – Internal Operations
  - Swati Goel, IT

### NIST MEP Org Chart

- 480 - Office
- 481 - Network Agreements Management
  - A Group
  - B Group
  - Competitions
- 482 - Performance Evaluation and Economic Impacts
  - Performance Metrics and Evaluations
  - Center Business Intelligence
  - Data Analytics
  - State Relations
- 483 - National Programs
  - Food
  - Cybersecurity
  - Industry 4.0
  - MATTR/MATTR+
  - Semiconductors
- 484 - National Platforms
  - Network Knowledge Management Workforce
  - Supply Chain
- 485 - Outreach and External Affairs
  - Legislative Affairs
  - Press and Public Relations
  - Social Media and Communications
  - External Events/FACA
- 486 - Internal Operations
  - Program Compliance and Audit
  - Budget
  - Finance
  - IT
  - HR Facilities
  - Front Desk

### MEP Program Budget Outlook

- FY 2023 Final Appropriation Status
  - \$175 million for MEP
  - \$13 million in disaster supplemental
  - Funding not subject to cost share requirements (elective for Centers receiving state funds conditioned on federal cost share requirement)

- FY 2024 Appropriation Status
  - CR through March 8, 2024
  - \$277.2 million for President's budget
  - \$175 million\* Congressional CJS Appropriations Bill from 3/3/24
  - Return of Cost Share requirements
  - House to vote on Wednesday, 3/6/24
  - Senate to vote on Friday, 3/8/24
    - \*Numbers are subject to change

#### NIST MEP Projected Spend Plan: Continuing Resolution through March 8, 2024

- Available Funding:
  - CR Funding Through 3/8/24 = \$76.5 million
  - Carryover from FY 2023 = \$5.7 million
  - PY Recoveries = \$3.7 million
  - Total Available Funding = \$85.9 million
- Planned Expenditures
  - Center Renewals = \$73.9 million
  - Contracts = \$1.6 million
  - NIST MEP Labor = \$5.8 million
  - NIST and Program Overhead = \$4.6 million
  - Total Planned Expenditures = \$85.9 million

#### Re-competition of the MEP National Network

- Jan. 1, 2025
  - Florida
- July 1, 2025
  - Colorado, Connecticut, Indiana, Michigan, New Hampshire, North Carolina, Oklahoma, Oregon, Tennessee, Texas, Virginia
- Jan. 1, 2026
  - Idaho, Illinois, Minnesota, New Jersey, New York, Washington, West Virginia, Wisconsin
- Oct. 1, 2026
  - Alabama, Arkansas, California, Georgia, Louisiana, Massachusetts, Missouri, Montana, Ohio, Pennsylvania, Puerto Rico, Utah, Vermont
- April 1, 2027
  - Delaware, Hawaii, Iowa, Kansas, Maine, Mississippi, Nevada, New Mexico, North Dakota, South Carolina, Wyoming
- July 1, 2029
  - Alaska

#### 2023-2027 MEP National Network Strategic Plan 18-month Metrics

- Three Strategic Pillars to Helping SMMs Overcome Challenges
  - Mitigating supply chain vulnerabilities
  - Narrowing the workforce gap
  - Leveraging technology
- The MEPNN Strategic Plan lays out strategies for the Network to consider when working to mitigate supply chain vulnerabilities. The MEPNN has a goal to increase supply chain visibility and to assess supply chain risk.
- Metrics Summary
  - Mitigating Supply Chain Vulnerabilities

- Goal: Increase engagement with critical domestic manufacturing industries to mitigate supply chain vulnerabilities.
- Supply Chain Measure #1: As MEP looks to mitigate supply chain vulnerabilities, it is important to identify and engage critical industries in the national and local supply chains. The MEPNN Strategic Plan identifies this need under the “map supply chains” tactic.
  - To support this analysis, MEP referenced the key products and critical technologies identified in the Administration’s 100-day supply chain report. The key industries identified were:
    - Semiconductor manufacturing and advanced packaging
    - Large capacity batteries
    - Critical minerals and materials
    - Pharmaceuticals
  - MEP then applied industry codes (NAICS codes) that represent the four identified industries, using those codes to understand how engaged the MEPNN is with the identified critical industries.
  - The 12-month goal to engage with 492 clients in critical national industries was set based on a 5-year analysis through CY2023 and would be a 3% increase.
  - The clock on the 12-month goal began with the beginning of FY2024 (October 2023).
  - So far, MEP Centers have reported one quarter’s worth of activities (2023Q4) in FY2024.
  - In FY2024 YTD, MEP Centers have completed 208 projects with 148 different manufacturers in identified critical industries.
  - The MEPNN is 30% of the way towards the goal and on track to meet the target set.
    - SCOIN will enable MEP to learn about additional critical industries at regional level
  - Industries identified in MEIS for Engagements
    - Aerospace – Defense Specific
    - Aerospace – General
    - Automotive
    - Automotive – (Hybrid – Electric Vehicle Specific)
    - Defense
    - Medical Equipment and Supplies
    - Pharmaceuticals
    - Semiconductor and Circuit Manufacturing
- Goal: Mitigate supply chain vulnerabilities by increasing the MEPNN’s business risk assessment and mitigation projects.
- Supply Chain Measure #2: An additional tactic identified in the MEPNN Strategic Plan to mitigate supply chain vulnerabilities is the need to assess supply chain risk and to rapidly detect those risks as they emerge. This requires planning and overall business and supply chain resiliency. MEP has data to inform the Program on what the MEPNN has done in the business and supply chain resiliency space.
  - Using client and project details, MEP is able to determine how many projects have been completed with manufacturers in the business and supply chain resiliency space. To determine this, MEP looks into the project titles and descriptions for relevant keywords. The keywords in this analysis include:
    - Resilient
    - Resiliency
    - Business continuity
    - BCP (business continuity planning)
    - Succession
    - Risk assessment
    - Supply chain



- Supplier scouting
  - Market diversification
  - Supplier diversification
- The 12-month goal to complete 775 resiliency projects with MEP clients represents a 3% increase from prior MEP performance periods.
  - The target was set based on a 5-year analysis through CY2023 and would be a 3% increase.
- The clock on the 12-month goal began with the beginning of FY2024 (October 2023).
- So far, MEP Centers have reported one quarter's worth of activities (2023Q4) in FY2024.
- In FY2024 YTD, MEP Centers have completed 152 business resiliency related projects with 146 different manufacturers.
- The MEPNN is 20% of the way towards the goal and a little behind on meeting the set target.
- There are 3-quarters left in FY2024.
- Resiliency projects and issues rise during times of need, such as the pandemic. The MEPNN would like to keep resiliency on the top of companies' minds even when an emergency is not ongoing.
- Projects identified with National Account – MEAPP – SCOIN
- Total Projects Submitted – 68 projects submitted by 9 Centers (IMEC, MMEP, MEPOL, MMTC, MN, OMEP, PAMEP, Polaris, UMEP)
- Project Mode
  - Assessments: 32
  - Implementation: 20 (opportunity to find out more about these types of projects especially if SSO Matches)
  - Training: 16
- Narrowing the Workforce Gap
  - Goal: Grow the number and depth of partnerships that are workforce-supporting.
  - Workforce Measure #1: One tactic identified in the Strategic Plan is to broaden partnerships and connections with educational and other entities participating in the workforce space. This is something NIST MEP has data to track.
    - On a quarterly basis, MEP Centers report/refresh their list of active partners in MEIS. As of February 2024, there are nearly 2,100 active MEP Center partners listed in MEIS.
    - Each partner submission must be tagged with a “type of organization”, and by isolating certain types of partner organizations NIST MEP can identify which partners are educational/workforce related.
    - The types of partner organizations identified as educational/workforce related include:
      - Community Colleges
      - EDA University Centers
      - Local/Regional Economic Development Organizations
      - State Workforce/Labor Agencies
      - Technical Colleges
      - Universities
      - Workforce Investment Boards
    - After an analysis of partner types, 690 workforce supporting partnerships were identified in MEIS.
    - The goal is to grow the number of workforce supporting partnerships across the country to help MEP narrow the workforce gap.
    - The MEPNN 12-month strategic goal of a 3% increase in workforce supporting partnerships would result in 21 new workforce supporting partnerships across the country, or 711 in total.

- When looking at net growth in FY2024 YTD, there was 0 overall growth. MEIS still reflects 690 workforce supporting partners of MEP Centers.
- However, in the first quarter of FY2024 (2023Q4) 6 new workforce supporting partners were added. The issue is that 6 older workforce supporting partners were removed from MEIS which mitigated the net growth.
- Goal: Increase the number of advanced manufacturing training projects delivered.
- Workforce Measure #2: An additional tactic identified in the MEPNN Strategic Plan to narrow the workforce gap is to use technology and productivity enhancements to navigate the current workforce shortage. Based on the data MEP collects, the Program can measure success by growing the advanced manufacturing technology related trainings offered.
  - On a quarterly basis, MEP Centers report the projects they complete with manufacturers. Using the client and project details, MEP can determine whether the project was training related and whether the project was related to advanced manufacturing technologies.
  - For this analysis, advanced manufacturing technologies include:
    - Augmented Reality/Virtual Reality
    - Cloud
    - Artificial Intelligence
    - Automate
    - Robots/Cobots
  - The 12-month goal to complete 75 advanced manufacturing related trainings was set based on a 5-year analysis through CY2023 and would be a 15% increase.
  - The clock on the 12-month goal began with the beginning of FY2024 (October 2023).
  - So far, MEP Centers have reported one quarter's worth of activities (2023Q4) in FY2024.
  - In FY2024 YTD, MEP Centers have completed 38 training projects focused around advanced manufacturing technologies.
  - The MEPNN is over 50% of the way towards the goal and on track to surpass the target set.
- Building a Future Pipeline of Workers
  - NIST MEP and MEP Centers are focused on increasing awareness of modern manufacturing jobs and all the people who work in them in order to:
    - Rebrand the public image of manufacturing nationally and in the states
    - Broaden partnerships and connections with educational and other entities working in this space
  - Annual campaigns and resources developed and shared across the Network and various communications channels
- Adopting and Leveraging Technology
  - Goal: Increase advanced manufacturing technology awareness and education engagements (projects) targeted to smaller manufacturers (<100 employees) in order to better prepare manufacturers to adopt new technologies.
  - Technology Measure #1: One of the major strategies in the MEPNN Strategic Plan related to leveraging technology is the need to increase technology adoption. Most manufacturers are behind in adopting advanced technology, but the issue is even more critical for small manufacturers (those with less than 100 employees). Without more education and assistance, technology will not level the playing field; it will instead cause a wider performance gap between large and small U.S. manufacturers.
    - To overcome this challenge, MEP Centers can work with small manufacturers to educate and train the companies on how to best leverage advanced manufacturing technologies.
    - To track success in this space, MEP can look at how many advanced manufacturing related projects were completed with manufacturers that have less than 100 employees.
    - For this analysis, advanced manufacturing technologies are identified as:

- Augmented Reality/Virtual Reality
- Cloud
- Artificial Intelligence
- Automate
- Robots/Cobots
- The 12-month goal to complete 190 advanced manufacturing technology projects with manufacturers that have less than 100 employees represents a 10% increase from previous performance periods.
- The 12-month goal was set based on a 5-year analysis through CY2023.
- The clock on the 12-month goal began with the beginning of FY2024 (October 2023).
- So far, MEP Centers have reported one quarter's worth of activities (2023Q4) in FY2024.
- In FY2024 YTD, MEP Centers have completed 77 advanced manufacturing related projects with manufacturers that have less than 100 employees.
- The MEPNN is 41% of the way towards the goal and on track to surpass the target set.
- Goal: Increase cybersecurity awareness and adoption projects to make manufacturers more resilient and prepared to adopt new technologies.
- Technology Measure #2: Cybersecurity is another approach discussed in the MEPNN Strategic Plan to encourage more use of advanced technology by manufacturers. The more advanced technology is used, the more critical cybersecurity becomes. To assess the MEPNN's work in this space, MEP can look at all cybersecurity related projects completed with manufacturers.
  - To track success in this space, MEP can analyze how many cybersecurity related projects were completed with manufacturing clients. This is done by examining the completed project's titles and descriptions.
  - For this analysis, cybersecurity related projects are identified using the following keywords:
    - Cyber (cybersecurity and cyber-security)
    - CMMC
    - DFARS
    - DoD Cyber
    - NIST Cyber
    - 800-171
    - 800-53
- The 12-month goal to complete 745 cybersecurity related projects was set based on a 5-year analysis through CY2023 and represents a 5% increase from previous performance periods.
- The clock on the 12-month goal began with the beginning of FY2024 (October 2023).
- So far, MEP Centers have reported one quarter's worth of activities (2023Q4) in FY2024.
- In FY2024 YTD, MEP Centers have completed 87 cybersecurity related projects
- The MEPNN is nearly 12% of the way towards the goal. The MEPNN is a little behind but has 3 quarters left in FY2024 to increase cybersecurity services.
- NIST MEP anticipates that these counts will rise with the introduction of "Light Interaction" reporting. Many cybersecurity projects do not lend themselves to our traditional survey. "Light Interaction" reporting will help us overcome this barrier.

#### Partnerships and Collaborations

- Targeted Industry Sectors - NIST MEP is closely looking at industries that are crucial for supporting domestic manufacturing, creating jobs, and enhancing national security. This includes:
  - Aerospace

- Defense
- Clean Energy
- Food
- Semiconductor
- Medical Devices
- NIST MEP is focused on creating and/or strengthening partnerships that support our strategic priorities. Partnerships take many forms such as a signed MOU which is a formal agreement between NIST MEP and other organizations like federal agencies and labs that signal their intent of collaborating to better serve our customers.
  - Auto Communities Interagency Policy Committee - MEP is actively involved with the Auto Communities Interagency Policy Committee (IPC). This group aims to assist suppliers, particularly small and medium sized suppliers, in the transition from ICE vehicle production to zero-emission vehicle (ZEV) production and to the production of clean-energy and other components in short supply. Participants include people from:
    - Department of Energy
    - Department of Labor
    - Made In America Office | Office of Management and Budget
    - Department of Treasury
    - White House | National Economic Council
    - Argonne National Lab
  - MEP is working with the IPC to determine how MEP Centers can provide technical and workforce assistance to suppliers that are high-risk for disruption during the EV transition.
- MOUs and Collaborations
  - NASA: NIST MEP is building on its relationship with NASA and signed an MOU that established a framework for identifying and pursuing technology transfer opportunities and collaborations with U.S. manufacturers, leveraging the resources of both NASA and MEP. In April, NIST MEP is working with NASA to support Find Your Place in Space Week between April 6th and April 13th. This campaign is focused on attracting future generations of workers to the industry.
  - Recently, MEP and MxD (one of the Manufacturing USA institutes) signed an MOU to advance digital adoption by small and medium sized manufacturers. MEP is also working with other Manufacturing USA institutes on MOUs - CESMII (Smart Manufacturing) and CYMANII (cybersecurity) among other collaborations.
  - MEP and Manufacturing USA have separate, albeit related, focuses. MEP and Manufacturing USA are strengthening their relations to provide manufacturers with a more comprehensive range of support services. This collaboration can enhance the impact of our programs, drive innovation, and improve the competitiveness of U.S. manufacturers
  - Other MOUs:
    - DOE-MESC (Manufacturing and Energy Supply Chains)
    - Department of Transportation (DoT)
    - U.S. Patent and Trademark Office (USPTO)
    - Association of Procurement, Technical and Assistance Centers (APTAC)
  - MEP and NIST labs are also closely collaborating in the areas of Industry 4.0, hydrogen economy, standards for food safety, cybersecurity, applied economics, and through MEP's MATTR services, two inquiries resulting in two agreements with NIST labs and manufacturers.
    - Labs:
      - Argonne National Lab – (DOE lab) Technology, Supply Chain, Internal Combustion to EV transformations, High Performance Computing
      - National Renewal Energy Lab – (DOE lab) Supply Chain, Offshore Wind Energy

- Lawrence Livermore National Lab – (DOE lab) Technology, ISO50001 (Energy Management) Implementation
- Idaho National Laboratory – (DOE lab) Technology
- Pacific Northwest National Lab – (DOE lab) Technology
- John Hopkins Advance Propulsion Lab – Technology, AR/VR
- Jet Propulsion Laboratory – NASA, Supply Chain, OEM Mapping.

### Discussion

- Board discussion primarily focused on how to build the pipeline for future manufacturing workers, highlighting the need to get K-12 schools to promote technical and trade schools as great options following graduation as opposed to the 4-year undergraduate path that has been ingrained for so long. G. Friedberg raised the fact that 4-year bachelors programs are not the right choice for many people, but they choose to go through them because they were never properly informed about technical and trade schools and that they can offer just as promising and lucrative futures as 4-year colleges.
- C. Smith asked if the strategic goals were influenced by some of the priorities that the network has also identified. P. Raghavan that they were and the 3 strategic goals were what the entire network had identified as their priorities as well. C. Smith also commented that she would like to look more into how NIST MEP could leverage the network or influence how its manufacturers' readiness to participate in the newer industries.
- J. Ford asked when they looked at survey results of the impacts of engagement if they ranked the MEPs by their value added. P. Raghavan responded that they do not rank centers based on value added because the surveys were filled out by clients whose answers do not always accurately reflect the true value added by a center.
- W. Chang asked how closely aligned the MEP cybersecurity projects are to the NIST 183 standards and P. Raghavan stated that they are very closely aligned because they are based on the NIST standards.

## Supply Chain Optimization and Intelligence Network (SCOIN) Update

### Speaker:

Nathan Ginty, MEP Division Chief of National Platforms Division

### Supply Chain Optimization and Intelligence Network (SCOIN) Overview

- Awarded on June 1, 2023.
- SCOIN is a two-year pilot program investing in the National Network to study manufacturing ecosystems and identify gaps in an effort to build more resilient sustainable supply chains through MEP assistance.
- Improvements and enhancements continue to be implemented in MEP Enterprise Information Systems (MEIS).
- SCOIN maps the capabilities and interconnections within manufacturing supply chains. Centers are assessing and capturing manufacturers' capabilities and mapping ecosystems. NIST MEP divisions work closely in concert with each other to provide a multi-faceted approach to solutions.
- It is designed to scale up and enhance the impact of supplier scouting services to source domestic products and continue expansion of capabilities
  - SCOIN FTE and SSO are both increasing.
- Provides MEP overview and Supplier Scouting webinars monthly to federal partners, their suborganizations, and financial award recipients. Examples include:
  - DOC

- HUD
- DOT
- DOE
- DOI
- Attends, engages, and presents at numerous industries' conferences that represent the federal government supply chain priorities (EV, semiconductor, etc.).
- Supports the MEPNN when engaging OEMs to map out and better understand domestic supply chains.
- Builds capacity in each MEP Center by facilitating the employment of supply chain subject matter experts.
- Outreaches to OEMs and SMMs to broaden industry knowledge of MEP and educate them on the benefits of utilizing the National Network and supplier scouting services.

#### MEPPNN Supplier Scouting Usage

- January 2024 Supplier Scouting Usage
  - 27 opportunities opened
    - 14 items from 4 government agencies
      - 1 state agency
      - 3 federal agencies
    - 12 items from MEP Centers
    - 1 item from a private entity
  - 21 opportunities closed and published
    - 86% avg. Center response rate
    - 4 items from 2 government agencies
      - 3 Environmental Protection Agency
      - 1 U.S. Department of Commerce
    - 16 items from MEP Centers
    - 1 item from a private entity

#### SCOIN Early Successes

- OEMs
- Multi-state Collaborations
- Supply Chain Services

#### Discussion

- W. Chang asked how much of the gathered data was done in collaboration with other private entities who are also collecting data on supply chains and manufacturing, and if there is a correlation between the datasets. N. Ginty explained that all Centers use different program systems which have varying models depending on the needs of the MEP Centers, but all of their data is collated in MEIS.
- J. Smith asked if the program reaches down to the thousands of very small manufacturers NIST MEP has. N. Ginty responded that through the partnerships at the Centers and at NIST MEP HQ it does reach them in terms of the opportunities it provides.
- It was stated that having large OEMs on the advisory board, such as Oshkosh and now Boeing will help guide our strategic discussions on the entirety of the supply chain.

## EV Readiness Panel Discussion

### Speakers:

G. Nagesh Rao, MEP Deputy Director

Ingrid Tighe, Michigan MEP Center Director  
Phil Mintz, North Carolina MEP Center Director  
Ethan Karp, Ohio MEP Sub-Recipient, MAGNET Center Director

N. Rao briefed the Board on the EV readiness panel discussion, introduced the Center Directors and moderated the discussion.

- N. Rao asked how the rising national focus and push on transition to EVs affected the pace of change within the Directors' states and regions, and what that implication looks like for their MEP Centers. P. Mintz said that the rise in EVs gave North Carolina the opportunity to compete differently and they are beginning to see a lot more OEM efforts related to EVs. There are several manufacturers of components for EVs as well as a Korean EV automotive manufacturer opening factories there, creating a new market in North Carolina. I. Tighe explained that 50% of automotive investments go to EVs and Michigan is seeing those investments and new manufacturing go to southern states rather than the OEMs revamping their existing factories in Michigan. To counter this trend Michigan created a large focus on building Mega-sites and EV production capabilities to draw in OEMs and their investments. E. Karp informed the Board that Ohio has a number of OEMs that have recently announced that they are going to start manufacturing components for EVs, and his Center is conducting an EV conference so companies with experience entering the EV supply chain can talk with companies wanting to enter the market and answer their questions on how to actually transition.
- N. Rao queried the panel as to what they are seeing in regards to workforce development for EV production. E. Karp stated that a lot of his Center's work on EVs is focused on workforce development because if Ohio continues to bring in these large OEMs there will be a large number of unfilled positions. To combat that, the state and the MEP Center are leading an effort to develop a competency model that articulates how they will create those EV and semiconductor jobs; the Center's role is to coordinate all of Ohio's educational systems with the manufacturers that support the Center agreeing to the training standards and modes of engagement.
- A. Parker asked what the panelists' experiences are with trying to convince young people to join the auto industry. E. Karp explained that unlike Michigan, Ohio doesn't have a cultural legacy of auto manufacturing so many people just don't know that manufacturing jobs exist there. E. Karp stated that a lot of his Center's work was on raising awareness about manufacturing jobs among kids and trying to funnel them towards community colleges and apprenticeship programs. I. Tighe answered that Michigan actually has very similar problems in addition to fighting old notions of manufacturing jobs being dirty, dull, and dangerous. P. Mintz stated that North Carolina is dealing with the opposite issue, which is fear from the employer level of companies that make non-automotive parts because with all the large investments coming into the state for EVs they are scared their employees will leave to go work in those manufacturing plants.
- N. Rao inquired as to what fears the EV OEMs have with the push towards EVs. P. Mintz said one fear is that the sale of EVs is slowing down and not accelerating as predicted, but the OEMs are already financially committed with their large investments in building new manufacturing plants. I. Tighe responded that the first fear is the competition for talent mobility; second is the current extreme competitiveness in mobility R&D; thirdly OEMs still need to invest in ICE as well as EVs because the OEMs are still only profitable on the ICE side; fourth, the barrier to entry is very high for small and medium sized companies; fifth is the workforce transition with the current workforce; and lastly is the lack of infrastructure and grid to support EVs.
- S. Ketter asked what the short, mid, and long-term role is of small and mid-size manufacturers in the EV supply chain. I. Tighe stated that it will be a challenge for them and they will have to decide whether they want to transition to EV software development, EV component manufacturing, or whether they'll remain as part of the legacy ICE car market. P. Mintz explained that many of his Center's manufacturers are diversifying and producing a few EV components as well as other

products outside of the automotive industry. E. Karp and P. Mintz both discussed how one of the biggest areas of opportunity for those manufacturers is going to be building out the infrastructure for EVs and the charging stations that will be required.

- G. Friedberg asked the panelists what their MEP Centers are doing to help manufacturers who have never been in the automotive space enter the EV market. P. Mintz responded that it's just like any other business that wants to enter a new market, they work with them on their business plans and inform them about what steps to take and what certifications will be required.
- T. Smith inquired as to what language the panelists are using around EVs to draw young people in to manufacturing careers. I. Tighe replied that they are still working on that, but the idea is to make EV manufacturing appear just as high tech, innovative, and cool as companies like Apple and Google, which attract a large portion of the younger demographic that the EV industry needs to tap into as well for future workforce development.
- N. Rao asked how MEP Centers' partnerships and cooperative collaborations with manufacturing institutes could go forward to mitigate risk and maximize returns. I. Tighe answered that there are a lot of opportunities for collaborations but they first have to identify where the help is needed and what form that help should take.
- C. Smith raised the question of how the panelists are preparing their MEPs to be in position to engage in the EV market rather than being stuck trying to catch up to the market and technology. I. Tighe responded that her Center is trying to be more proactive and strategic in their engagement, even reaching out to tier 1 OEMs to learn what their supply chain will look like and determining where the Center's MEPs might fit into that chain. E. Karp added that MEPs need to change how they attract and where they source their talent from; they need to think about taking on a lot more technology; and they have to do much more innovation and have the leadership to do so.
- N. Rao posed the question of what the Board and the NIST MEP HQ (Federal) team could do to ensure its leadership in the space around innovation, technology, global economic security, and national security. I. Tighe answered that they could continue their support for efforts like the Board meeting, Hill Day, state programs, and partnerships on both the state and federal levels. E. Karp agreed and commented that they need NIST MEP HQ and the Board to use their platforms to talk about the MEP programs to their peers both at the federal and their state levels. E. Karp stated they also need OEM connections and partnerships with the government.

## Public Comment Period

### Speakers:

Beverly Bobb, FACA Officer

Petra Mitchell, Catalyst Connection

Buckley Brinkman, Wisconsin Center for Manufacturing and Productivity

Angelina Rivera, NIST MEP

Bryana Head, NIST MEP

Siobhan Powers, NIST MEP

Jyoti Malhotra, MEP Division Chief of National Programs

- P. Mitchell commented that the Manufacturing USA institutes should better share intellectual property that they have gathered throughout the small and medium sized manufacturing community.
- B. Brinkley's comment focused on NIST MEP's role of facilitating the translation and sharing of intellectual property and data between manufacturing institutes and small and medium sized manufacturers. B. Brinkley also commented that several issues that MEPs face locally are actually national issues that need a consistent approach nationally.



- A. Rivera introduced herself to the Board; she is a Supply Chain Group Manager and new to NIST MEP.
- B. Head, the Competitions Administrator, introduced herself to the Board.
- S. Powers introduced herself to the Board; she is the Administrative Officer, part of division 486.
- J. Malhotra commented on things she is seeing that are working between ARM, MEP National Network, and the Network of Manufacturing USA institutes.

## Day One Wrap Up

### Speakers:

Pravina Raghavan, MEP Director  
 Bernadine Hawes, Chair, MEP Advisory Board  
 Donald Bockoven, Vice Chair, MEP Advisory Board

B. Hawes chose to postpone the wrap up until the end of day 2 of the meeting, giving some brief closing remarks instead. B. Hawes thanked the new members Candice Smith and Winston Chang for joining the Board and for their valuable input. D. Bockoven thanked the Board Members for the constructive interactions throughout the day and turned the meeting over to Pravina Raghavan to briefly review the logistics for the rest of the evening and day 2 of the meeting. The Board meeting then recessed for the day at 4:01 p.m.

## Day 2 Welcome Back

### Speakers:

Pravina Raghavan, MEP Director  
 Bernadine Hawes, Chair, MEP Advisory Board

B. Hawes called the meeting to order at 9:00 a.m. and welcomed the Board members and attendees back for the second day of the NIST MEP Board meeting.

## Open Discussion

### Speakers:

Pravina Raghavan, MEP Director  
 Bernadine Hawes, Chair, MEP Advisory Board  
 Donald Bockoven, Vice Chair, MEP Advisory Board

- B. Hawes asked the Board members how they felt the meeting had gone the day prior. A. Parker stated that compared to past meetings, the diversity of the group was very synergistic; there were good conversations, and it set up future meetings to be very robust and to really get to how they could best support manufacturing throughout the states and territories. J. Smith said that it was a great balance between being presented information and being given the opportunity for the Board to discuss that information. G. Friedberg expressed that the EV panel was one of the best panels she had ever attended and the conversation around it was transformative. M. Kmetzo stated that it was good to see the faces of the new NIST MEP staff members and also to have the Directors of 3 different MEP Centers present.

- B. Hawes thought the discussion around the EV panel was very thought provoking, but the Board still needs to talk about policy and industrial policy regarding EVs. S. Ketter and T. Smith discussed how the conversation on EVs highlighted how the defense side and commercial side could be switching roles in the future in regards to technology acquisitions, as the current norm is for the commercial side to acquire new technology from the defense side.
- B. Hawes stated that as the Advisory Board they could suggest and advise that NIST MEP needs to continue to have these types of discussions at their Advisory Board meetings with different aspects of the MEPNN's Strategic Plan: supply chain, workforce, and technology.
- J. Smith stated that they have to get the politics out of EV because the competition doesn't have politics in their EV policy or in what consumers think, they simply make EVs and constantly advance battery technology. D. Bockoven mentioned the fact that the Board generally talks about the manufacturing ecosystem, but there are also the ecosystems of the country and the world, and we are currently in a change phase and a transformational phase in industry.
- W. Chang commented that the speed of innovation is increasing dramatically, meaning new business cycles and models, and he sees the Board as positioned to be able to influence that ecosystem significantly.
- B. Hawes asked the Board members what did not work well the prior day, to which A. Parker replied that she thought everything worked, but what they need to focus in on and didn't on the first day are changing manufacturing's image and developing the future workforce pipeline to get more students learning about manufacturing jobs. A. Parker said the biggest opportunity is the SCOIN effort because there are large opportunities there to network, share best practices across the network, and as they go forward they should continue to advise and encourage that effort.
- B. Hawes suggested that following the meeting the Board members should reflect on what they heard and begin to redo their working groups going forward based on the conversations they had during the meeting. P. Raghavan explained that when they relaunched their working group structure they called them strategic plan pillars, and the 3 groups are on supply chain, workforce, and technology and innovation. One of the points is to have Board members in those groups so that they can conduct network wide conversations on implementation.
- C. Smith stated that if there could be a time where there's concerted effort to hear from the Center Directors about their experiences, what they're facing, and what's important to them it would be important. D. Bockoven explained that in the past they had divided Centers amongst the Board members and each did an outreach program and captured all of the outreach feedback, so it might be worth considering reinstituting that practice. P. Raghavan elaborated that the Executive Outreach working group was specific to the Board members, and it conducted much of that outreach.
- S. Ketter commented that in future Board meetings he would like to get a better appreciation for the good work that's occurring at individual Centers organized around their 3 pillars, and also hear from the states on what their best practices are and develop a working group around them to be able to put together uniform products that could be disseminated as standard best practices.

## **Aerospace Technology Panel - How can SMMs use technology to be a gamechanger in the aerospace supply chain**

### **Speakers:**

Jyoti Malhotra, MEP Division Chief of National Programs

Quincy Brown, Director of Space STEM and Workforce Policy in the White House

Kevin Carr, FloridaMakes Center Director (Florida MEP)

Beatriz Gutierrez, CONNSTEP Center Director (Connecticut MEP)

Tony Fernandez, New Hampshire MEP Center Director

J. Malhotra briefed the Board on the aerospace technology panel discussion, and moderated the discussion. The panelists introduced themselves with short professional backgrounds and overviews of their centers.

- J. Malhotra asked the Center Director panelists which of the manufacturing sectors that they provide services to are their top and/or strategic sectors and where does the aerospace sector fall regarding their strategic and operational plan. T. Fernandez responded that his state has the ability to foster innovation by allowing people the freedom to think and make mistakes. The state does this by running competitions such as the annual New Hampshire Tech Alliance, which promotes innovation and conversation between innovation companies. W. Chang asked what the policies are in New Hampshire and what the contexts of those policies are. T. Fernandez replied that the tax basis is the key side; the small innovation companies are allowed to grow and develop without any type of internal or external integration from the state. The problem in New Hampshire is they have cloistered events; everything stays internal to the companies and they won't tell everyone until they've determined what the solution is, which doesn't work well in manufacturing. T. Fernandez stated that what he's trying to do through the MEP system is inform people about these companies, leading those newly informed people to interact and network with the companies.
- In response to J. Malhotra's question B. Gutierrez answered that her state had much the same issue regarding supply chains, with a manufacturer importing products from 6 states away when there was a company 3 miles away in Connecticut that could manufacture the same part. B. Gutierrez explained that there are 3 supply chains within Connecticut that account for 35% of the workforce; aerospace, shipbuilding, and medical devices. Out of that, aerospace represents 18.5% of the state's manufacturing workforce, with 29,000+ people working in aerospace. Connecticut has strong OEMs but the innovations they create are not trickling down the supply chain because it has been a state of basic manufacturing and with their number of contracts there is no room for change. B. Gutierrez explained that a major issue for her state is that they need the ability to get manufacturers' attention and see the necessity for innovation. CONNSTEP needs to establish funding and resources beyond their normal funding, that would allow them the space to de-risk entry into new technologies for the manufacturers, the Centers, and for the defense and security of the U.S. B. Gutierrez stated that this is one way MEP can be a support to CONNSTEP and its manufacturers. A. Parker asked, in regards to generational manufacturers, if CONNSTEP was seeing a lot of them looking to get out of the business. B. Gutierrez replied that they are seeing that a lot, and in response CONNSTEP is doing a lot of work on succession planning. One option CONNSTEP is exploring to prevent those manufacturers from closing is to bring in partners from underrepresented players in that market who have successfully run companies in other industries, match them with a company, the owner mentors them, and there's a financial incentive for both sides to participate. K. Carr added that what they need to do and what manufacturing is asking them to do is not currently in alignment with how outcomes are being measured.
- J. Malhotra asked Q. Brown to describe which component of the aerospace sector is the main focus of her office. Q. Brown answered all of them, but a few years ago the Vice President asked the Space Council to use space to inspire; and to identify and reduce barriers to entering and staying in the space workforce. Q. Brown explained that the Space Council now includes the Department of Education and the Department of Labor, and those institutions help break down the silos between the departments and agencies, enabling conversations to understand what the challenges are and how they can be addressed.
- J. Malhotra asked Q. Brown to comment on the alignment of her office's strategic direction with MEP's National Strategic Plan. Q. Brown answered that the piece they are most aligned with is workforce development; other components in the White House are focused on supply chain and

technology innovation but her offices does provide input into some of the work that comes out of the Office of Science and Technology Policy around innovation and technology.

- J. Malhotra asked the Center Directors what the main areas of focus are for aerospace sector services in the present and future, and how that aligns with the Strategic Plan. K. Carr responded that his Center's main area of focus is the supply chain, which is driven by the fact that even with Space Force and SpaceX being located in Florida, the high value contributions are coming from out of state. This makes building out their own production capabilities their priority. B. Gutierrez answered that post-pandemic they are very focused on supply chain and technology because the two are heavily interconnected. To address both areas CONNSTEP is reincorporating the practices of productivity and quality compliance into those 2 models. B. Gutierrez explained, in relation to workforce, that as they bring in these new technologies there is a major opportunity and need for upskilling people, and to bring in supervisors with more developed management skills. T. Fernandez replied that workforce is the main focus for New Hampshire as 15% of the manufacturing workforce is going to hit retirement in 2024. To deal with this issue New Hampshire's MEP Center is looking at the college and feeder systems. T. Fernandez informed the Board that the state has a program that allows high school students during their junior and senior years to complete their associate degree.
- J. Malhotra asked T. Fernandez and B. Gutierrez to comment on the challenges in delivering services to the aerospace sector as it relates to their Northeast region. B. Gutierrez answered that in her region manufacturers cannot keep up with all of their contracts and orders because of the lack of skilled workers, leading to an inability to look at the future because they have to be focused on meeting their day-to-day priorities. B. Gutierrez elaborated that the demand is great but manufacturers need to invest now in training, technology, and better systems, unfortunately it's hard to change mindsets around that necessity. CONNSTEP is working together with the state on the workforce by educating the community that manufacturing is a good career choice for their lives. T. Fernandez responded that in New Hampshire they're looking for ways to turn the widget innovators into widget manufacturers by learning from large OEMs on how they manage to be both innovators and manufacturers. T. Fernandez explained that they are working with the large OEMs to borrow their technology and give it to the smaller manufacturers. Also, being a small state, New Hampshire is working with other small states in the region to borrow technology back and forth between them, and as an MEP they are then able to transmit that technology down to their customer base.
- M. Kmetzo asked the panelists if they see best practice sharing as being more regional as opposed to all 51 Centers sharing them among each other. T. Fernandez responded that it's both because as a small center, in order to survive they reach out to every Center to find best practices. B. Gutierrez replied that when it regards workforce or funding it is more regional, but when it's about tools, capabilities, or experience that is when they reach out to NIST to be connected to other Centers that have specifically what they are looking for.
- L. Foreman asked T. Fernandez what they were doing in New Hampshire to support entrepreneurial education and to cultivate the next generation of innovators into becoming the next generation of manufacturers. T. Fernandez answered that his MEP is small and doesn't have that expertise, so they essentially outsource that work within the group they work with that includes the SBA, the SBDC, SCORE and others that do have the resources and expertise on innovation and entrepreneurship.
- J. Malhotra asked Q. Brown how the MEP program, the NIST MEP, and the Centers can help her efforts. Q. Brown responded that at her level they primarily hear about issues and challenges from large primary manufacturers, but their needs and concerns are much different from those of the small and medium sized manufacturers. Q. Brown explained that if MEP, NIST MEP, and the Centers could figure out a way to make the small and medium sized manufacturer's challenges more visible in the larger discourse it would be helpful, because she recognizes that what they face is much different and she does not want them getting left behind or forgotten.

**Guest Speaker: Secretary Gina Raimondo**

## **Speakers:**

Gina Raimondo, Secretary, U.S. Department of Commerce

P. Raghavan introduced the Secretary of Commerce to the Board and turned the presentation over to Secretary. G. Raimondo who thanked the Advisory Board and all of the staff for their hard work. She stated that she believes the best is yet to come and that in the next 5 years NIST MEP will be doing its most important work because they have a President that believes deeply in manufacturing and a Secretary who knows MEP and is extremely supportive of it. This is exemplified by the passing of the CHIPS act, with a historic amount of money being invested in manufacturing and broadband; due to broadband there have been 10 announcements of fiber optics manufacturers expanding in the U.S. G. Raimondo explained that every time there is a new OEM, there can be up to 100 small manufacturers that grow up around the OEM for the supply chain, making NIST MEP's work even more important. G. Raimondo discussed how due to COVID every American now knows what supply chain resiliency is because of the major delays in supply chains during the pandemic and companies have learned how important that resiliency is. G. Raimondo stated that in the current moment NIST MEP is poised to breathe life into the small manufacturers, and they need NIST MEP because without it they won't know how to use AI, how to do design, how to use robotics, or how to begin to work with the large OEMs. G. Raimondo praised NIST MEP for their work in the last year, having interacted with over 36,000 manufacturers leading more than \$16 billion in sales, \$3 billion in cost savings, and \$5 billion in new client investments helping to create or retain over 107,000 jobs.

M. Bahar thanked Secretary Raimondo for her support of the MEP program, her support and belief in manufacturers and manufacturing, and for taking the time to meet and address the Manufacturing Advisory Board.

## **Meeting Wrap Up**

### **Speakers:**

Pravina Raghavan, MEP Director  
Bernadine Hawes, Chair, MEP Advisory Board

### **Concluding Comments**

- G. Friedberg said that having an app or something similar so that MEP Centers could see which Centers had best practices and what they are would be a great tool, and that is what she sees coming out of all these conversations. She added that EV and aerospace are exemplar sectors for manufacturing and the ones that will move the industry forward.
- W. Chang said as a new member having the discussions with the Center Directors and seeing the macro impacts of NIST MEP's efforts were his biggest takeaways.
- S. Ketter stated that this was the most engaged he had seen the Board at a meeting, and that the panels were excellent. S. Ketter said he would like to see metrics developed for measuring the impacts of their efforts and customer feedback as well.
- M. Kmetzo said the discussions made her really focus on how manufacturing is going to draw in and educate the next generation of workforce.
- T. Smith stated that the meeting brought up several areas that need to be worked on including building for the next generation; highlighting collaboration versus competition; that the future of manufacturing is going to be small and adaptive; and the need to incentivize and measure entrepreneurship.

- L. Foreman said that the pace of innovation is happening so much faster that the life cycle of products today is shorter and shorter because everyone wants something that's new and improved, but people don't think of manufacturing in the U.S., they immediately think of global sourcing. That is where there is an opportunity for MEPs to change that trend.
- N. Rao stated that he had taken notes of action items that the Board requested and would ensure that they continued forward on those action items in stable steady growth. N. Rao said that he already had some ideas forming for the June meeting including potentially a briefing from DoD on their Defense Industrial Base Policy. Quoting General Powell N. Rao reminded the Board that “Perpetual Optimism is a Force Multiplier” reminding them to maintain optimism in their focus.
- D. Bockoven commented he's happy to see there's been a lot of progress on collaborations in manufacturing since he joined the Board, but there's still more to be done. D. Bockoven also stated that there's a culture issue around manufacturing in the U.S. and they need to change it. D. Bockoven reminded the Board Members that it is their role to be advocates for the MEP Program.
- M. Bahar said intersections of different manufacturing sectors are crucial for the future, as highlighted by the discussions on EVs and aerospace.
- B. Hawes’ final comments reinforced the idea that the advisory board is helping the nation “solve for X” in the manufacturing sector, whether X is supplies, people, adoption of advanced technologies, or entrepreneurship. We should already be designing manufacturing systems for the 22nd century.

## Next Meeting

The next Advisory Board meeting is set for June, 2024, date TBD and to be held virtually.

## Adjournment

With no further business, B. Hawes adjourned the meeting at 11:49 a.m.