National Institute of Standards and Technology
Manufacturing Extension Partnership
Advisory Board
Minutes of the March 7-8, 2023 Meeting

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 1:09 p.m. to 4:54 p.m. on March 7, 2023, and from 9:03 a.m. to 11:37 a.m. on March 8, 2023 at the Information Technology and Innovation Foundation (ITIF) in Washington, DC. The meeting had 73 attendees, including Board members, NIST and NIST MEP staff, participants from MEP Centers, guest speakers and observers. Cheryl Gendron is the Designated Federal Officer for the MEP Advisory Board.

Attendees

Board Members
Donald Bockoven, CEO, Fiber Industries LLC
*Bernadine Hawes, Vice Chair, MEP Advisory Board and Senior Advisor, Econsult Solutions, Inc.
*Sean Ketter, Vice President, Oshkosh Corporation
*Miriam Kmetzo, Executive Vice President, Welding Technology Corp
*Mitch Magee, Manufacturing Industry Consultant
*G. Christopher Mathews, Chairman, National Custom Hollow Metal Doors and Frames and Maple Leaf Awning and Canvas
*Pat Moulton, Executive Director of Workforce Development, Vermont State College System
*Matthew Newman, Chair, MEP Advisory Board and Principal Managing Partner of New Era Advisors
*Annette Parker, President, South Central College
*Tyrome Smith, Director of Partnerships, Common Mission Project
*George Spottswood, Owner and CEO, Quality Filters Inc.

NIST MEP Participants
*Pravina Raghavan, MEP Director
*Cheryl Gendron, NIST MEP, Advisory Board Liaison and Designated Federal Officer, MEP Advisory Board

Guest Speakers
Gina M. Raimondo, U.S. Secretary of Commerce
Laurie Locascio, NIST Director
*Mojdeh Bahar, Associate Director for Innovation and Industry Services, NIST
*Robert Atkinson, Founder and President, Information Technology and Innovation Foundation (ITIF)

Observers
Mellissa Ayala, NIST MEP
*Beth Bafford, Calvert Impact Capital
Robert Barnes, NIST MEP
Megean Blum, NIST MEP
*Beverly Bobb, NIST MEP
*Buckley Brinkman, WiCMP

*Steve Campbell, NIST MEP
*Monica Claussen, NIST MEP
*Larry Danner, The Clearing
Melissa Davis, NIST MEP
Nadine DeJesus, NIST MEP
Doug Devereaux, NIST MEP
*Anthony Diaz, NIST MEP
Scott Dockum, NIST MEP
*Gail Friedberg Rottenstrich, Zago Manufacturing Company, Inc.
*Michael Garvey, M-7 Technologies
Autumn Hernandez, NIST MEP
*Carrie Hines, Foundation for Manufacturing Excellence (FORME)
Sekou Johnson, NIST MEP
*Graham Koester, Neal R. Gross & Co., Inc.
Brian Lagas, NIST MEP
*Skye Lawrence, Ampere Financial
Wiza Lequin, NIST MEP
Brooke Linehan, NIST MEP
*Kathie Mahoney, MassMEP
*Jyoti Malhotra, NIST MEP
Anthony Mastalski, NIST MEP
*Heather Mayton, NIST MEP
*Kevin McIntyre, NIST MEP
*Steve McManus, RTI International
Monyelle Mingo, NIST MEP
Justin Mocca, NIST MEP
Michele Montgomery, NIST MEP
Andrew Nobleman, NIST MEP
*Michael O'Donnell, Iowa State University, CIRAS (IA MEP)
Andrew Peterson, NIST MEP
Kim Pinckney, NIST MEP
Katie Rapp, NIST MEP
Craig Reid, NIST MEP
*Kirsten Rieth, RTI Innovation Advisors
Jennifer Rosa, NIST MEP
Gerson Santos-Leon, NIST MEP
*Mark Schmit, NIST MEP
Carol Shibley, NIST MEP
Julia Shriner, NIST MEP
Hope Snowden, NIST MEP
Gloria Solomon, NIST MEP
Megan Spangler, NIST MEP
Michael Stone, Stone and Associates
Michael Taylor, NIST MEP
Nico Thomas, NIST MEP
*Carroll Thomas, NIST MEP
David Vasko, Industry Consultant
Ben Vickery, NIST MEP
Marlon Walker, NIST MEP
Samm Webb, NIST MEP
*Thomas Williams, NIST MEP

** indicates attendee participated in-person*

Welcome and Introductions

Speakers:

Pravina Raghavan, MEP Director
Matt Newman, Chair, MEP Advisory Board
Bernadine Hawes, Vice Chair, MEP Advisory Board

P. Raghavan began the meeting by thanking all of the Board members in attendance both in-person and online, as well as the MEP Staff present and the Board's invited guests. C. Gendron briefed the Board on the guidelines for the meeting, as set forth in the Federal Advisory Committee Act (FACA). P. Raghavan introduced Mojdeh Bahar, the NIST Associate Director for Innovation and Industry Services, and Carroll Thomas, former MEP Director and Senior Advisor for MEP. P. Raghavan played a video from Secretary of Commerce Gina Raimondo in which she stated her opening remarks and thanked the MEP Advisory Board for their hard work and service to the MEP program.

Following the video M. Newman delivered his opening remarks, welcoming prospective new members in attendance, and new members to the Board. M. Newman informed the Board that this would be his last meeting as Chair and would be passing the role to Bernadine Hawes. B. Hawes introduced herself and shared some of her professional background. P. Raghavan then introduced the new Board members, Sean Ketter of Oshkosh Corporation and Tyrome Smith of Common Mission Project; she also introduced the Board's special guests, Beth Bafford of Calvert Impact Capital, Gail Friedberg Rottenstrich from ZAGO, Louis Foreman of Eventys Partners, and Michael Garvey from M-7 Technologies. Four prospective new members were going through the vetting process and would hopefully be full members by the time of the next Board meeting in June. M. Newman then had the Board members and guests go around the room and introduce themselves, their organization, and share how long they'd been involved with MEP. P. Raghavan reviewed the meeting agenda.

Briefing from Associate Director of Innovation and Industry Services

Speakers:

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

NIST
- Part of the U.S. Department of Commerce.
- Mission is to promote U.S. Innovation and Industry or competitiveness by advancing measurement science standards and technology in ways that enhance economic security and improve our quality of life.

Innovation and Industry Services Programs
- Manufacturing Extension Partnership (MEP)
  - 51 Centers, one in each state and Puerto Rico, with 1,400 manufacturing experts to assist small and medium manufacturers (SMMs) on various areas such as automation, cybersecurity, workforce development and supply chain scouting and resiliency.
  - MEP assisted the federal government agencies and private sector entities in finding suppliers and assisted SMMs to pivot into new sectors.
  - MATTR+ allowed for small and medium manufacturers to have access to NIST labs and their world-renowned scientist to solve technology problems effecting manufacturers.

- Office of Advanced Manufacturing
  - Manufacturing USA Program Office -coordinated program of 9 Federal agencies and 16 Advanced Mfg. Innovation Institutes.
  - Managed NIST NIIMBL institute on biopharmaceutical manufacturing.
  - Managed NIST extramural advanced manufacturing programs, including current Technology Roadmaps.
  - Managed Advanced Manufacturing Pandemic Response Projects -$150 million on 45 high impact projects.
  - Coordinated Advanced Manufacturing for National Science and Technology Council.
- Technology Partnerships Office
  - Structured collaborative relationships between NIST researchers and external partners.
  - Managed the NIST Small Business Innovation Research (SBIR) program.
  - Provided R&D related economic analysis.
  - Administered and hosted the Federal Laboratory Consortium.
- Baldridge Performance Excellence Program
  - Maintained and promoted the use of the Baldrige Excellence Framework and Criteria for Performance Excellence.
  - Managed the Baldrige Award, the highest level of recognition for quality and performance excellence in the nation.
  - Supported and encouraged performance excellence in all sectors.
  - Supported nationwide network of state/regional programs.
  - Provided assessment tools and educational offerings, including the annual Quest for Excellence conference, the Baldrige Executive Fellows Program, and the Job Quality Toolkit.

Manufacturing USA Network

- An industry led consortium, which consisted of 16 Institutes soon to be 17.
- 9 Government Agencies participating
  - 3 of which were sponsoring agencies
    - Department of Commerce sponsored NIIMBL.
    - Department of Defense sponsored 9 institutes.
    - Department of Energy sponsored 6 institutes, soon to be 7.
- Institute and State MEP Centers were partners in some of the 21 awards, totaling $1 billion in awards from the Economic Development Agency

CHIPS for America Incentives

- $39 billion for manufacturing with the goals of:
  - Incentivize the expansion of manufacturing capacity for semiconductors.
  - Attract large-scale investments in advanced technologies such as leading-edge logic and memory.
  - Advance U.S. technical leadership
- $11 billion for R&D to:
  - Build the National Semiconductor Technology Center.
  - Create the National Advanced Packaging Manufacturing Program with Manufacturing USA institutes.
  - Advance the National Institute of Standards and Technology measurement science.

CHIPS and Science Act: NIST

- CHIPS authorizations through NIST were aimed to do 5 things:
  - Support critical technology research and standards.
  - Strengthen small manufacturers.
  - Combat supply chain disruptions.

- Grow Manufacturing USA.
- Promote competitiveness in international standards.

CHIPS Call Outs: MEP and Manufacturing USA

- Manufacturing Extension Partnership:
  - Created an Expansion Award Pilot Program.
  - Established a voluntary National Supply Chain Database.
  - Language which didn't require MEP Centers to enroll their clients in the GSA Advantage Program.
  - Tripled MEP's Authorized Funding Levels: FY23 $275 million, FY24 $300 million, FY25-27 $550 million
- Manufacturing USA
  - Supported creation of up to three NIST-sponsored Manufacturing USA institutes
  - Increased Manufacturing USA's Authorized Funding Levels
  - Language on initiatives on workforce, DEIA engagement/outreach with the institutes' ecosystems, and tech transition

Job Quality Toolkit

- Job Quality Toolkit was developed by the NIST Baldridge office with support from DOC
- The Job Quality Toolkit, rooted in the Baldridge Excellence Framework, is a tool that organizations can use to improve the quality of the jobs they offer.
- MEP support would include:
  - NIST MEP website
  - A NIST MEP infographic for Centers to brand and post to their website
  - Information webinars for Centers
  - Development of an online self-assessment for companies that would align with the JQT

Discussion

- M. Kmetzo asked if Manufacturing USA had its own advisory board and M. Bahar responded that it did not, but each of the member institutes had an advisory Board as did the CHIPS Act itself.

Director's Update

Speakers:

Pravina Raghavan, MEP Director

FY22 Impact Survey Results

- Over 116,700 jobs created or retained
- $18.8 billion in new and retained sales
- $6.4 billion in total investment in U.S. manufacturing
- $2.5 billion in cost savings

FY22 Top MEP Projects

- Last year, MEP Centers worked with more than 10,200 manufacturers on over 16,100 projects. The top ones were:
  1. Workforce
  2. Quality
  3. Lean
  4. Strategic Business Management

5. Growth
6. Technology
7. Sales Marketing Business
8. Information Technology
9. Engineering Plant Layout
10. Financial Analysis Assistance
11. Sustainability

FY22 Manufacturer Challenges Reported

- 66% - Employee Recruitment
- 60% - Cost Reduction
- 41% - Growth
- 34% - Product Development
- 25% - Managing Partners
- 18% - Sustainability
- 17% - Technology Needs
- 11% - Financing
- 7% - Other Challenges
- 5% - Exporting

National Programs: Leveraging Technology & Empowering Manufacturers

- Food Industry Services (FY22 MEP Center Sample as of Feb. 2023)
  - 45 Webinar presentations
  - 403 Projects
  - 717 Workshops/Training Sessions
- Industry 4.0
  - 2,699 projects FY15-FY22
  - $501.9 million New/Retained Sales
  - 3 AMTS Projects completed
  - MEP-MxD MOU
- Cybersecurity
  - Approx. 50% of projects help DOD contractors and subs
  - 140% increase since 2020
  - 705 projects completed in FY22
- ExporTech (2006 to present)
  - Approx. 80 clients/year
  - $469K average sales increase/retained
  - $93K average savings
  - $623 million in total program sales
  - 6 new jobs per company
- Toyota Kata FY22
  - 10 projects/year increase
  - 93 projects in FY22
  - $514K saved per client
- New Partnerships
  - 4 Manufacturing USA Institutes
  - 6 Universities
  - 7 Federal Labs
  - 9 Federal Agencies
  - 7 Other Stakeholders (e.g. NEMA, ACS, MRS)

- 7 NIST Lab Divisions within 6 OUs
- OEM Engagement
  - Semiconductor (Intel, NXP, Applied Materials)
  - Food (Whole Foods)
  - Medical Devices (Stryker, Medtronic, Baxter, Edwards S.)
  - 14.0 (Rockwell)
  - Aerospace (Boeing)
- Targeted Industry Sectors
  - Semiconductor
  - Space Sector
  - Clean Energy
  - Medical Devices
  - Electric Vehicles
  - Biomanufacturing

Supplier Scouting

- CY2021 Supplier Scouting Metrics
  - 118 opportunities scouted
    - 3 opportunities from 2 federal agencies
    - 115 opportunities scouted for the MEP National Network (MEPNN)
  - 20 industries served
  - 43manufacturing processes
  - 397 matches submitted by MEP Centers
  - $130 million business opportunities
- CY2022 Supplier Scouting Metrics
  - 155 opportunities scouted
    - 65 opportunities from 8 federal agencies
    - 90 opportunities scouted for MEPNN
  - 19 industries served
  - 33 manufacturing processes
  - 98 matches submitted by MEP Centers
  - $33.9 million business opportunities

FY 2022 Center State Competition

- Notice of Funding Opportunity One: Complete
  - Kentucky and South Dakota awarded to new host organizations
  - Nebraska and Rhode Island awarded to incumbent hosts
  - All awards started on Jan. 1, 2023
- Notice of Funding Opportunity Two
  - Arizona and Maryland, with service to Washington, D.C.
  - Selection process is complete
  - Awards to be announced April 2023 for July 1, 2023 start

MEP Economic Impact Analysis

- In February 2023, Summit Consulting and the W.E. Upjohn Institute for Employment Research completed a study that found the MEP Program generated a substantial return on investment of nearly 18.1:1 for the $158 million invested in FY 2022 by the federal government.
  - 269,373 jobs created
  - $29.9 billion revenue in GDP

Strategies for NIST MEP From Strategic Plan FY 23-27

- To execute and continue to build on the four strategic foundational pillars, the NIST MEP will:

- Recast and adapt its operations, policies, processes, practices, and structures
- Expand partnerships and strategic
- Develop its knowledge and learning capabilities and leverage its convening
- Build the MEP brand, messaging, and marketing reach

NIST MEP Org Chart

- The Deputy Director position was vacant.
- There were 2 Acting Division Chiefs, Steve Campbell and Anthony Diaz.
- 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 2022 Appropriation Status
  - $158 million for MEP
  - Funding not subject to cost share requirements (elective for Centers receiving state funds conditioned on federal cost share requirement)
- FY 2023 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)

NIST MEP Projected Spend Plan through Sept. 30, 2023

- Available Funds
  - Appropriation = $175M
  - Disaster Supplemental = $13M
  - Carryover from FY 2022 = $5.6M
  - Prior-year Recoveries = $0.2M
  - Total Available Funding = $193.8M
- Planned Expenditures
  - Center Renewals = $134.4M
  - MSE/MDAP = $0.8M
  - Expansion Awards = $20.4M
  - State Relations - SSTI = $1.2M
  - Disaster Awards = $3M
  - Contracts = $7.2M
  - NIST MEP Labor = $12.4M
  - NIST and Program Overhead = $14.4M
  - Total Planned Expenditures = $193.8M

Major Legislation

- The President signed into law the CHIPS and Science Act of 2022 on August 9, 2022.
  - Key provisions included:
    - Creates an Expansion Award Pilot Program
    - Establishes a voluntary National Supply Chain Database
    - Language which does not require MEP Centers to enroll their clients in the GSA Advantage Program
    - Triples MEP's Authorized Funding Levels: FY23 $275 million, FY24 $300 million, FY25-27 $550 million
  - "[The Act will] strengthen American manufacturing, supply chains, and national security, and invest in research and development, science and technology, and the workforce of the future to keep the United States the leader in the industries of tomorrow, including nanotechnology, clean energy, quantum computing, and artificial intelligence."—White House Press Release 8/9/2022

MEPNN Expansion Award Pilot Program

- The group will discuss and review expansion awards to provide the following services:
  - Workforce development (which may include training advanced manufacturing personnel)
  - Resiliency of domestic supply chains
  - Expanded support for adopting advanced technology upgrades at small and medium manufacturers
  - Global marketplace projects -projects that have potential for enhancing the competitiveness of U.S. SMMs in the global marketplace
  - Allow NIST to accept funding from other Federal departments and agencies for competitive MEP grants
  - Require MEP to increase outreach to underserved communities
  - Ensure the MEP Centers are specifically focused on supporting American manufacturing
  - PLUS -Other Award amounts at the discretion of the Director

Expansion Award Pilot Programs on Supply Chains

- Why is MEP focused on supply chain?
  - Executive Order 14005 requests Federal Agencies to utilize MEP Supplier Scouting.

    - CHIPS ACT establishes a pilot program of expansion awards to provide services, including resiliency of domestic supply chains and to build capabilities across the Hollings Manufacturing Extension Partnership for domestic supply chain resiliency and optimization.
- What is MEP doing?
    - $20.4 million investment in MEPNN on supply chain optimization and intelligence network through a Request for Application (RFA)
    - Centers may request up to $400,000 funding
    - Period of performance is 2 years
    - RFA published in March 2023
    - Projects can start as early as June 1, 2023
    - Report is due to Congress by October 1, 2025.

National Supply Chain Optimization and Intelligence Network

- Goals:
    - Expand existing MEP Center and Network capabilities to provide services focused on national supply chain optimization
    - Establish a National Supply Chain Intelligence Network that will:
        - Comprehensively support supplier scouting services,
        - Rigorously assess and analyze domestic manufacturing capabilities,
        - Expand the inherent knowledge of each MEP Center's local manufacturing ecosystems
        - Build an integrated knowledge of U.S. supply networks

Discussion

- S. Ketter asked, regarding reported challenges, whether growth meant ability to meet demand or increased strategic business planning. P. Raghavan said it meant growth as a business. S. Ketter expressed surprise that cybersecurity was not a reported challenge and P. Raghavan explained that MEP needed to find a way to sell manufacturers on cybersecurity and make them realize that it was something they needed. C. Matthews asked if MEP had a tool for cybersecurity and helping manufacturers with it. P. Raghavan said they did, the issue was primarily that clients did not view cybersecurity as must-have coverage.
- A. Parker asked what was involved in workforce projects and P. Raghavan explained that it involved trainings, recruitment, retention projects and that different MEP Centers had different projects. Some of the projects involved apprenticeships and continuing education.
- M. Garvey asked if the supplier scouting by the federal agencies was related to the DOD manufacturing readiness levels and assessments. P. Raghavan responded that at that time the supplier scouting was mainly done by the agency but that MEP was investigating readiness levels by collecting data from their clients. MEP Centers knew best which of their clients could handle additional demand. P. Raghavan stated that the DOD gave MEP money to help their suppliers but did not come to MEP to look for suppliers.
- M. Newman asked if MEP knew how many Centers out of the 51 had deployed a technology or human resources solution at that time, to which P. Raghavan responded that they did not; they had some anecdotal evidence but all of that information was based on self-reports from the MEP Centers.

Guest Speaker: Robert Atkinson

Speaker:

Robert Atkinson, President, Information Technology and Innovation Foundation (ITIF)

C. Thomas introduced guest speaker Rob Atkinson and thanked him for hosting the MEP meeting. R. Atkinson briefed the Board on his professional background as well as the history of the ITIF. He explained that ITIF was the think tank that initially proposed the Manufacturing USA Network to the Obama administration. R. Atkinson went on to explain that there were a number of reasons for the decline in US manufacturing, none of which could be dealt with until people stopped denying that the problems existed. A third of U.S. manufacturing jobs were lost in the 2000s, mostly due to a lack of competitiveness and China. R. Atkinson explained that there was an active campaign arguing that the job loss had nothing to do with trade and competitiveness, it had to do with the superior productivity in manufacturing; this was completely wrong. Groups continued to deny that the issue was caused by a lack of competitiveness because to accept that the issue was caused by this lack would mean they would have to admit that free trade had not worked out the way they thought it would, and that maybe the U.S. needed to get tougher. Secondly they would need to acknowledge the potential need for a National Manufacturing Policy.

R. Atkinson then went over some of the policy and analytical work that ITIF did. Recently ITIF had done a study on productivity in manufacturing in the U.S. over the last few years as compared to the rest of the economy. Until 2011, manufacturing productivity was growing faster than the rest of the U.S. economy, since then it had been the opposing. The study concluded that the U.S. needed to have the right training policies, the right extension and assistance policies, and the right tax and trade policies in order for U.S. manufacturers to improve. The ITIF felt that the U.S. needed to grow in the advanced manufacturing sector; in comparison Japan spent 40 times what the U.S. did on their MEP program and Germany spent 20 times more than the U.S.

Discussion

- M. Garvey asked what R. Atkinson attributed the decline in productivity in manufacturing to since 2011. R. Atkinson responded that he did not think anyone really knew, but he attributed it to a combination of increased difficulty, advanced technologies not yet being ready for mass use, and companies not wanting to invest capital as much as they used to. Also the U.S. had weak R&D tax credits and had not built out community colleges, technical programs, and apprenticeship programs as it should have. A. Parker commented that even before the college and technical school levels, there was a severe lack of career technical education programs at the K-12 level. Students have been graduating without ever having picked up a hand tool. The culture of children learning a trade because of what their parents had done had faded away in the last few decades.
- M. Newman asked what watershed changes the U.S. might make to encourage investment in robotics and capital projects. R. Atkinson said that he thought the U.S. needed to invest more in industry and universal collaboration and he personally would suggest an investment tax credit. R. Atkinson compared the U.S. to other countries that had more robust manufacturing sectors and said the difference was that those countries aligned their companies with a national mission more than the U.S. did.

2023-2027 MEPNN Strategic Plan Overview and 18-month Metrics

Speakers:

Pravina Raghavan, MEP Director
Matt Newman, Chair, MEP Advisory Board
Bernadine Hawes, Vice Chair, MEP Advisory Board

MEP National Network Strategic Foundational Pillars

- Empower Manufacturers

    - Assist U.S. manufacturers in embracing productivity-enhancing innovative manufacturing technologies, navigate advanced technology solutions and recruit and retain a skilled and diverse workforce.
- Champion Manufacturing
    - 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.
- Leverage Partnerships
    - 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.
- Transform the Network
    - 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.

Previous Strategic Goal Areas

1. Strengthening the National Supply Chain
    - Increase supplier matches and clients served in critical areas
2. Serving the Manufacturing Workforce
    - Increase client engagement in workforce services
3. Increasing Awareness
    - Amplify and measure Network brand awareness
4. Leading in Technology Deployment
    - Increase client engagement in technology services and implementation

Previous 18-month Measures of Success

- Strengthening the Supply Chain
    - Increase supplier scouting requests by 10%
    - Increase successful supplier scouting matches by 10%
- Serving the Manufacturing Workforce
    - Increase clients engaged with workforce projects by 10%
- Increasing Awareness
    - Amplifying Network brand awareness by at least 10%
- Leading in Technology Deployment
    - Increase clients engaged with technology services projects by 10%
    - Increase MATTR requests/inquiries by 10%

In 2027, the MEPNN will…

- Have the dual capacity to excel at serving SMMs in individual states and to function as a powerful cohesive, collaborative network capable of impacting complex regional and national issues.
- Have been established as a recognized national resource and expert authority in American manufacturing.
- Be a valued partner with other federal agencies, state authorities, associations, and other groups working in manufacturing.
- Have the knowledge and capacity to support SMMs and manufacturing in anticipating and being prepared for future trends.

- Enable consistent and cost-effective technology adoption.
- Annually increase its market penetration.
- Annually increase the economic impacts it creates for U.S. manufacturers.
- Enable SMMs access to a skilled workforce.
- Help SMMs become nimbler in pivoting into new markets.
- Be engaged in the relevant new directions that the country is going in relation to manufacturing.

2023-2027 MEP National Network Primary Strategies

- The MEP National Network Strategic Plan has three primary goals:
  - Narrow the workforce gap
  - Mitigate supply chain vulnerabilities
  - Leverage technology

Goal 1: Narrow the Workforce Gap

- Enable SMMs to navigate the current workforce shortage while improving productivity and profitability through:
  - Upskilling
  - Use of technology and productivity enhancements
  - Partnerships (e.g., connect educational entities to manufacturing needs and jobs/careers)
  - Improving work conditions, job quality, career paths, etc.
  - Assessing underserved populations and integrating them into the manufacturing industry
  - Making the case for integration of underserved populations with SMMs
- Build a pipeline of future employees for the manufacturing sector through:
  - Rebranding and marketing the public image of manufacturing nationally and in the states
  - Broadening partnerships and connections with educational and other entities working in this space

Goal 2: Mitigate Supply Chain Vulnerabilities

- Increase supply chain visibility
  - End-to-end awareness (supplier's supplier and customer's customer)
  - Mapping Supply Chains (key industries; in individual states)
  - Working with OEMs to map out how SMMs fit into their supply chains
- Assess supply chain risk
  - Able to identify vulnerabilities
  - Able to rapidly detect risk as they emerge
  - Strengthen supplier development
  - Increase supplier scouting capacity

Goal 3: Leverage Technology

- Increasing tech adoption
  - ID early adopters and leverage them to move the early majority
  - Defining tech capabilities and business cases for adoption for customers to increase impact (IT and OT)
  - Educating Center staff on the different kinds of technology to increase impact with customers
- Ensuring holistic, comprehensive application and use of technology (not just in production but in business operations, etc.)
  - Creation of roadmaps for customers and aligning them to customer's strategic goals
- Strengthening cybersecurity capabilities
  - Communicating the importance of mitigating cybersecurity risks
- Partner with federal labs to accelerate the use of new technologies

- Co-develop tech capabilities and business cases for adoption to bring new insights to industry

Intersections Across Network Strategic Goals

- The strategic goals do not exist in silos. They intersect with each other.
  - Narrowing the workforce gap through engagement future technologies
  - Increasing technology adoption across served customers
  - Strengthen workforce knowledge of supply chain dependencies to help predict supply chain risks

2023-2027 MEPNN Strategic Goals

1. Narrow the Workforce Gap
2. Mitigate Supply Chain Vulnerabilities
3. Leverage Technology

Goal 1: Narrow the Workforce Gap

- Enable SMMs to navigate the current workforce shortage while improving productivity and profitability.
  - Increase clients engaged with workforce projects by 10%
- Build a pipeline of future employees for the manufacturing sector.
  - Number of workforce projects
  - Number of training projects
  - Number of workforce-focused partnerships
  - IMPACT measures

Goal 2: Mitigate Supply Chain Vulnerabilities

- Increase supply chain visibility
  - Increase supplier scouting requests by 10%
  - Increase successful supplier scouting matches by 10%
  - Number of Supplier Scouting services clients served/ delivered / matches
- Assess supply chain risk
  - Number of supply chain services delivered (Visibility, mapping, working with OEMs, risk assessments)
  - Number of activities Manufacturing Resiliency Group

Goal 3: Leverage Technology

- Increasing tech adoption
  - Increase clients engaged with technology services projects by 10%
- Ensuring holistic, comprehensive application and use of technology
  - Number of technology projects delivered
  - Number of industries of national importance served
  - Number of MEPNN group members (Industry 4.0, cybersecurity, MATTR, etc.) or meetings
- Strengthening cybersecurity capabilities
  - Number of cybersecurity assessments
- Partner with federal labs to accelerate the use of new technologies
  - Increase MATTR requests/inquiries by 10%
  - Number of partnerships or engagements with federal laboratories

2023 Working Groups

Speakers:

Pravina Raghavan, MEP Director
Matt Newman, Chair, MEP Advisory Board
Bernadine Hawes, Vice Chair, MEP Advisory Board

Proposed MAB Working Group - Volunteers

- Advisory Board Executive Committee
  - Don Bockoven
  - Louis Foreman
  - Bernadine Hawes
  - **Mitch Magee
  - Chris Mathews
  - **Matt Newman
  - Tyrome Smith
  - **George Spottswood
- Narrow the Workforce Gap
  - Beth Bafford
  - Don Bockoven
  - Louis Foreman
  - Gail Friedberg Rottenstrich
  - Bernadine Hawes
  - Miriam Kmetzo
  - **Mitch Magee
  - Annette Parker
- Mitigate Supply Chain Vulnerabilities
  - Sean Ketter
  - **Matt Newman
- Leverage Technology
  - Louis Foreman
  - **Mitch Magee
- MEPNN Expansion Awards
  - Don Bockoven
  - Bernadine Hawes
  - Chris Mathews
  - Tyrome Smith

**indicates Board members leaving in 2023

Proposed working groups moving into March of 2023:
Advisory Board Executive Committee Working Group

- Deliverable: Provide guidance on future MEP Advisory Board leadership and membership recruitment, provide insights into cultivating strong Board governance as well as explore ways to expand the MEP Advisory Board's role in regard to the local MEP Center Boards.
- NIST MEP Support: Pravina Raghavan, Wiza Lequin, Katie Rapp, Mark Schmit, Tom Williams and Cheryl Gendron

Narrow the Workforce Gap Working Group

- Deliverable: Provide guidance back to full board on programming to enable SMMs to navigate the current workforce shortage while improving productivity and profitability.
- NIST MEP Support: Steve Campbell, Wiza Lequin, Heather Mayton and Gerson Santos-Leon

Mitigate Supply Chain Vulnerabilities Working Group
- Deliverable: Provide guidance on programming to enable SMMs to mitigate supply chain vulnerabilities.
- NIST MEP Support: Steve Campbell, Jyoti Malhotra and Ben Vickery

Leverage Technology Working Group
- Deliverable: Provide guidance on programming to leverage technology.
- NIST MEP Support: Steve Campbell, Jose Colucci-Rios and Jyoti Malhotra

MEPNN Expansion Awards - Ad Hoc Working Group
- Deliverable: Provide guidance to the Board on the directive from the CHIPS and Science Act of 2022, Sec. 10251, Sec. 25B "Applications for awards under this section shall be submitted in such manner, at such time, and containing such information as the Director shall require in consultation with the Manufacturing Extension Partnership Advisory Board."
- NIST MEP Support: Pravina Raghavan, Beverly Bobb, Autumn Hernandez, Kevin McIntyre and Nico Thomas

Current NIST MEP National Network Working Groups, with MEP Centers
- Supplier Scouting
- Manufacturer Resilience
- Workforce
- Industry 4.0
- Cybersecurity
- Semiconductor
- Toyota Kata/Continuous Improvement
- Food Industry Services
- Marketing

Proposed Working Group Structure Moving Forward
- Advisory Board Executive Committee
  - Remains Comprised of MAB Members, ex-officio members and NIST MEP Staff
- Narrow the Workforce Gap, Mitigate Supply Chain Vulnerabilities, Leverage Technology
  - Integrate MAB WGs with related MEPNN WGs to better share knowledge with MEPNN, expand capacity, and expand to non-MAB members.
- MEPNN Expansion Awards
  - Transition to regular MAB Meeting briefing

Discussion
- P. Raghavan asked the Board if they approved of the newly proposed working group structure and whether the Board agreed that the the right metrics were presented to measure the effectiveness of efforts to accomplish the strategic goals. The Board generally agreed with both the working group structure and the measured metrics of effectiveness. B. Bafford suggested adding timelines to the goals and steps in the strategic plan to promote goal achievement, preventing them from remaining aspirations.
- A. Parker discussed the fact that many students leave K-12 not knowing what they want to do; she asked how MEP could leverage its partnerships to ensure that there would be a trained workforce pipeline. C. Thomas stated that they needed different kinds of partnerships that broadened the population of who could fill the labor demands. G. Friedberg Rottenstrich discussed how her company hired employees with only high school diplomas and sent them to college but the

community colleges often did not offer the types of courses and certifications that were necessary for those employees. P. Moulton mentioned the issues surrounding manufacturing's public image in the U.S. and the fact that many kids and young adults did not realize how broad the types of job opportunities in the field were, simply because manufacturing was still seen as a dirty and physical labor-intensive job sector.

- The Board had discussions on how to bring diversity into the manufacturing job sector, and what types of programs and partnerships they could leverage to start building a more diverse future workforce, beginning at the K-12 level.

Day One Wrap Up

Speakers:

Laurie E. Locascio, Director of NIST and the Under Secretary of Commerce for Standards and Technology
Pravina Raghavan, MEP Director
Carroll Thomas, Senior Advisory, NIST MEP
Matt Newman, Chair, MEP Advisory Board
Bernadine Hawes, Vice Chair, MEP Advisory Board

M. Bahar began the day one wrap up by introducing a special guest who had come to speak to the Board, Laurie Locascio. L. Locascio explained why she was so passionate about manufacturing by way of personal background, with her upbringing in Pennsylvania and having seen the decline in manufacturing from an early age. L. Locascio discussed the many ways in which the MEP was helping small and medium sized manufacturers in every state as well as in Puerto Rico by assisting them with increasing their sales, decreasing their costs, and implementing new technologies; making it possible, and profitable, for them to manufacture their products in the US. L. Locascio concluded her statement by thanking MEP and its Board members for their outstanding and ongoing service and work on reinvigorating U.S. manufacturing.

C. Thomas then honored the Board members for whom the meeting would be the last in their tenure on the Board. The members present in-person who were honored were Matthew Newman, George Spottswood and Mitch Magee. To close the first day of the meeting P. Raghavan reviewed the agenda for the next day, after which the Board meeting recessed for the day at 4:54 p.m..

Day 2 Welcome Back

Speakers:

Pravina Raghavan, MEP Director
Matt Newman, Chair, MEP Advisory Board

M. Newman welcomed the Board members and attendees back for the second day of the NIST MEP Board meeting and quickly moved into the first agenda item.

MEP Expansion Awards Strategy

Speakers:

Pravina Raghavan, MEP Director

Matt Newman, Chair, MEP Advisory Board
Bernadine Hawes, Vice Chair, MEP Advisory Board

CHIPS and Science Act of 2022 and the MEP Advisory Board: Sec. 10251, Sec. 25B.

- "APPLICATIONS.—Applications for awards under this section shall be submitted in such manner, at such time, and containing such information as the Director shall require in consultation with the Manufacturing Extension Partnership Advisory Board."
- "GLOBAL MARKETPLACE PROJECTS.—In making an award under this section, the Director, in consultation with the Manufacturing Extension Partnership Advisory Board and the Secretary, may take into consideration whether an application has significant potential for enhancing the competitiveness of small and medium-sized United States manufacturers in the global marketplace."

MEPNN Expansion Award Pilot Programs

- The group will discuss and review expansion awards to provide the following services:
  - Workforce development (which may include training advanced manufacturing personnel)
  - Resiliency of domestic supply chains
  - Expanded support for adopting advanced technology upgrades at small and medium manufacturers
  - Global marketplace projects -projects that have potential for enhancing the competitiveness of U.S. SMMs in the global marketplace
  - Allow NIST to accept funding from other Federal departments and agencies for competitive MEP grants
  - Require MEP to increase outreach to underserved communities
  - Ensure the MEP Centers are specifically focused on supporting American manufacturing
  - PLUS -Other Award amounts at the discretion of the Director

Expansion Award Pilot Programs on Supply Chains

- Why is MEP focused on supply chain?
  - Executive Order 14005 requests Federal Agencies to utilize MEP Supplier Scouting.
  - CHIPS Act establishes a pilot program of expansion awards to provide services, including resiliency of domestic supply chains and to build capabilities across the Hollings Manufacturing Extension Partnership for domestic supply chain resiliency and optimization.
- What is MEP doing?
  - $20.4 million investment in MEPNN on supply chain optimization and intelligence network through a Request for Application (RFA)
  - Centers may request up to $400,000 funding
  - Period of performance is 2 years
  - RFA published in March 2023
  - Projects can start as early as June 1, 2023
  - Report is due to Congress by October 1, 2025.

National Supply Chain Optimization and Intelligence Network

- Goals:
  - Expand existing MEP Center and Network capabilities to provide services focused on national supply chain optimization
  - Establish a National Supply Chain Intelligence Network that will:
    - Comprehensively support supplier scouting services,
    - Rigorously assess and analyze domestic manufacturing capabilities,
    - Expand the inherent knowledge of each MEP Center's local manufacturing ecosystems
    - Build an integrated knowledge of U.S. supply networks

Discussion

- B. Hawes asked who would own the National Supply Chain Intelligence Network. P. Raghavan explained NIST MEP would own it on behalf of the government.
- M. Newman asked if the funding for optimizing the supply chain could be used for a part-time/full-time employee or software purchase/development, and whether it was dictated how the money was to be used to optimize the supply chain. P. Raghavan informed the Board that there were some dictations, including that they had to hire a full-time employee or equivalent for optimization, they had to acquire some type of formal system that was open enough for data transfers to NIST, and supplier assessments needed to be conducted. M. Newman asked if a template had been developed to receive data in a uniform manner from the different input sources. P. Raghavan said they were currently in the process of constructing such a template. The Board discussed their desire to have interoperability of the datasets available, so that MEP Centers could use that data as a selling point for manufacturers in their state. This would incentivize manufacturers to share their own data, which was important since the data on manufacturing was based solely on self-reporting. B. Brinkman discussed how having access to these datasets and lists would allow MEP Centers and manufacturers to find answers and important resources, to resolve supply issues that arise, much quicker than flipping through industry directories and other methods that were currently being used by many in the manufacturing sector.
- The Board members discussed at length the fact that optimizing the supply chain, for many MEP Centers and manufacturers, was a workforce issue; they did not have employees skilled in that area and were not sure where they could procure such employees due to the workforce gap. P. Raghavan explained that this would likely be the first priority for MEP Centers when it came to the use of their allocated funds; hiring or upskilling their own employees on supply chain optimization, to then teach manufacturers how to upskill their existing employees, or potentially onboarding new employees with prior experience in the field. She stated that it made the most sense to have the people who could fix the existing system in place first, because the Centers wouldn't have the funds for a new system in the immediate future; this would allow work to start on optimization now, while preparing for the implementation of a new system.

Recognize New Board Leadership

Speakers:

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

P. Raghavan announced to the Board that Matthew Newman would be rotating off as Chair following the meeting and Bernadine Hawes, current Vice Chair, would be assuming the role upon his departure. Donald Bockoven would be assuming the role of Vice Chair. The Board thanked all of the members who were terming off after the meeting and welcomed the new Board leaders. B. Hawes and D. Bockoven made brief remarks, thanking the Board for their ongoing work and expressing their goals for the Board moving forward.

Members Leaving Service in 2023:

- E. LaDon Byars, Colonial Diversified Polymer Products, LLC - Leaving February 2023
- Mary Isbister, GenMet Corporation - Leaving March 2023
- Mitch Magee, Independent Consultant - Leaving March 2023

- Matthew Newman, Chair, MEP Advisory Board, New Era Advisors - Leaving March 2023
- George Spottswood, Quality Filters - Leaving May 2023
- Leslie Taito, Taito Comfort - Leaving July 2023
- Jim Wright, Proof Research - Leaving March 2023

Public Comments

Speakers:

Dave Vasko, Industry Consultant
Kathie Mahoney, MASS MEP
Steve McManus, RTI Innovation Advisor
Skye Lawrence, Ampere Financial
Jyoti Malhotra, NIST MEP

D. Vasko's comment focused on the workforce gap, stating that it was the most important strategic goal and that the other goals could not be accomplished without resolving that gap first. K. Mahoney's comment was that the MEP Centers could not solve the workforce gap problem, but through partnerships with educational institutions, career centers and other state organizations working with underserved populations, they could address the issue of the workforce pipeline. S. McManus commented that he was pleased to hear the Board discussing the issue of sustainability and suggested that they consider including metrics on sustainability in the database they were constructing. S. McManus also discussed succession planning, stating that it was an opportunity to mitigate supply chain vulnerabilities. S. Lawrence's comment reiterated S. McManus's comment on sustainability and thanked the Board for the opportunity to attend the meeting. J. Malhotra asked Board members to encourage manufacturers to consider using the MEP's MATTR+ service because it was geared towards connecting U.S. manufacturers with NIST Lab resources and expertise.

Meeting Wrap Up

Speakers:

Pravina Raghavan, MEP Director
Matt Newman, Chair, MEP Advisory Board
Bernadine Hawes, Vice Chair, MEP Advisory Board

M. Newman called for Board members to share their takeaways from the meeting. P. Raghavan asked Board members to inform the NIST MEP staff of any individuals or organizations that they thought should be included in future discussions, either in working groups or in joining the Board. M. Newman stated that working on and leading the Board had been one of the most meaningful professional engagements of his career. He thanked the Board for their hard work and adjourned the meeting at 11:37 a.m.