

**National Institute of Standards and Technology
Manufacturing Extension Partnership
Advisory Board
Minutes of the June 30, 2021 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 10 a.m. to 4:30 p.m. on June 30, 2021, via video teleconference. The meeting included about 90 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

Ray Aguerrevere, Vice President and General Manager for Custom Metal Designs
Jose Anaya, Dean of Community Advancement, El Camino College
Donald Bockhoven, CEO, Fiber Industries LLC
E. LaDon Byars, President and CEO, Colonial Diversified Polymer Products, LLC
Mitch Magee, Former Director, Global Advanced Manufacturing Team, PPG Aerospace Business Unit
Patricia Moulton, President, Vermont Technical College
Matthew Newman, Chair, MEP Advisory Board and President, New Era Advisors
George Spottswood, Owner and CEO, Quality Filters, Inc.
Jim Wright, Vice President of Operations, Proof Research

NIST MEP Participants

Cheryl Gendron, Advisory Board Liaison, NIST MEP and Designated Federal Officer, MEP Advisory Board
Rob Ivester, MEP Acting Director
Chancy Lyford, Division Chief for NIST MEP External Affairs, Performance and Support Division
Mary Ann Pacelli, Division Chief for NIST MEP Network Learning and Strategic Competitions Division
Mark Schmit, Division Chief for NIST MEP Regional and State Partnerships Division
David Stieren, Division Chief for NIST MEP Extension Services Division

Guest Speaker

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

Observers

Nicole Ausherman, NIST MEP
Melissa Ayala, NIST MEP
Robert Barnes, NIST MEP
Dan Berglund, SSTI
Michael Black, National Marker Company
Steve Black, Utah MEP
Megean Blum, NIST MEP
Katie Boeckl, NIST

Dave Boulay, Illinois Manufacturing Excellence Center
Buckley Brinkman, Wisconsin Center for Manufacturing and Productivity
Tom Bugnitz, Manufacturer's Edge
Steve Campbell, NIST MEP
Monica Claussen, NIST MEP
Dusty Cruise, Missouri Enterprise
Nadine DeJesus, NIST MEP
Emily Durham, Lewis-Burke Associates, LLC
Tricia Faccione, NIST MEP
Susan Foltz, Ohio Development Services Agency
Allison Forbes, Center for Regional Economic Competitiveness (CREC)
Beatriz Gutierrez, CONNSTEP
Jennifer Hagan-Dier, Manufacturer's Edge
Mereb Hagos, CREC
Bernadine Hawes, Econsult, immediate Past Chair, MEP Advisory Board
William Healy, NIST
Diane Henderson, NIST MEP
Tom Hilmes, Missouri Enterprise
Carrie Hines, American Small Manufacturers Coalition (ASMC)
Matthew Hoehler, NIST
John Kennedy, New Jersey MEP
Miriam Kmetzo, Welding Technology Corp.
Wiza Lequin, NIST MEP
Kathie Mahoney, MassMEP
Anthony Mastalski, NIST MEP
Heather Mayton, NIST MEP
Mark McCormick, FastLane
Kevin McIntyre, NIST MEP
Dimitrios Meritis, NIST MEP
Justin Mocca, NIST MEP
Lauri Moon, Innovative Manufacturers' Center
Andrew Nobleman, NIST MEP
Ndubuisi Orji, NIST
Celia Paulsen, NIST MEP
Andrew Peterson, NIST MEP
Ken Poole, CREC
William Rafferty, Texas Manufacturing Assistance Center (TMAC)
Sreenivas Ramaswamy, Department of Commerce
Katie Rapp, NIST MEP
Kari Reidy, NIST Office of Congressional and Legislative Affairs
Rikki Riegner, Pennsylvania MEP
Catherine Rimmer, NIST
Martin Romitti, CREC
Jennifer Rosa, NIST MEP
Cheryl Rybka, TMAC
Mark Sessumes, TMAC
Carol Shibley, NIST MEP
Julia Shriner, NIST MEP
Sheena Simmons, NIST MEP
Jennifer Sinsabaugh, New Mexico MEP
Megan Spangler, NIST MEP

Tiffany Stovall, Kansas Manufacturing Solutions
Michael Taylor, NIST MEP
Dileep Thatte, NIST MEP
Nico Thomas, NIST MEP
Mark Troppe, CREC
Ben Vickery, NIST MEP
Kayla Viveiros, Polaris MEP
Ken Voytek, NIST MEP
Marlon Walker, NIST MEP
Ben Wang, Georgia Tech Manufacturing Institute
Samm Webb, NIST MEP
Michael Wilson, NIST MEP

Welcome and Introductions

Speakers

Matt Newman, Chair, MEP Advisory Board
Mojdeh Bahar, NIST, Associate Director, Innovation and Industry Services
Rob Ivester, MEP Acting Director

M. Newman reviewed the agenda and made introductory remarks. R. Ivester welcomed the attendees and M. Bahar discussed key administration initiatives and proposed legislation relevant to the mission of NIST MEP and U.S. manufacturing. Executive Order 14005 on Ensuring the Future is Made in All of America by All of America's Workers establishes a substantial role for the MEP National Network™ (MEPNN) to partner with agencies to conduct supplier scouting. Executive Order 14017 on America's Supply Chains focuses on the need for resilient, diverse and secure supply chains to ensure U.S. economic prosperity and national security. This executive order (EO) also has implications for the MEPNN supplier scouting services and as part of a proposed MEP national supply chain initiative, under which MEPNN would partner with federal agencies and private top-of-supply-chain entities to identify gaps and map critical supply chains. The U.S. Innovation and Competition Act of 2021 (USICA) was passed by the Senate and is awaiting House markup. The act would advance and solidify U.S. leadership in scientific and technological innovation through increased investments in the discovery, creation and manufacturing of technology critical to the nation's security and economic competitiveness. Board members introduced themselves and their organizations, followed by C. Gendron reading the names of registered participants.

NIST MEP Senior Management Update

Speaker: Rob Ivester, MEP Acting Director

MEP Program Budget Outlook (as of June 30, 2021)

- Fiscal Year (FY) 2021 appropriation status
 - Base funding: \$150 million
 - \$4 million increase over FY 2020
 - No cost share requirement; elective for Centers receiving state funds conditioned on federal cost share requirement
- FY 2022 appropriation status
 - President's budget includes \$275 million appropriation for MEP
 - Cost share provision similar to FY 2021 might be included in FY 2022 appropriation

NIST MEP FY 2021 Projected Spend Plan

- Available funding
 - Full year appropriation: \$150 million
 - Carryover from FY 2020: \$7.3 million
 - Recoveries from de-obligations (anticipated): \$1.4 million
 - Funding from other agencies: \$0
 - Total available funding: \$158.7 million
- Planned expenditures
 - Center renewals: \$128.9 million
 - Strategic competitions: \$4.2 million
 - Contracts: \$4.7 million
 - NIST MEP labor: \$11.2 million
 - NIST and program overhead: \$9.8 million
 - Total planned expenditures: \$158.7 million

Coronavirus Aid, Relief, and Economic Security (CARES) Act Update (As of March 30, 2021)

- Manufacturers contacted: 138,468
 - Client projects completed: 3,601
 - Supplier searches: 807
 - Supplier matches: 276
 - Multi-Center engagements: 299
- CARES Act funding in review
 - CARES Act 60-day report – March (GAO-104526)
 - Review started in March 2021
 - Several meetings to answer questions
 - April 1 final report
 - No findings for MEP
 - Office of Inspector General audit on CARES Act funding
 - Exit briefing completed
 - No findings for MEP
- CARES Act funding initiatives included
 - Working directly with state governments
 - Linking state government policies and programs to manufacturers by participating in emergency task forces to address challenges and issues
 - Connecting the manufacturing industry and state procurement efforts
 - Managing state-level supply chain portals, linking manufacturers to demand and organizing them to deploy as needs change
 - Addressing specific issues with manufacturing personal protective equipment (PPE), medical supplies and medical devices
 - Helping manufacturers meet the country's urgent needs for PPE and medical devices by guiding them to information and solutions about testing protocols, quality testing and required certifications
 - Helping address issues of potential legal liabilities arising from the production of PPE and medical supplies and devices
 - Maintaining base operations and serving all manufacturers
 - MEP Centers are helping companies engage with customers in new and different ways: providing cybersecurity assistance – addressing new kinds of threats as employees work in new ways, and examining ways to use technologies to improve productivity

Strategic Competition Update

- State Partnership Award
 - Current award with State Science and Technology Institute (SSTI) ending June 30, 2021
 - New five-year award confirmed for SSTI
 - \$4,999,847 for the period of July 1, 2021 to June 30, 2026
 - Project activities include
 - Identify and understand the goals and personalities of individuals in key stakeholder groups
 - Build and enhance relationships with policymakers and leaders
 - Execute partnership strategies
- Competitive Awards Program (CAP)
 - New CAP notice of funding opportunity (NOFO) released Dec. 28, 2020
 - 14 eligible applications in review
 - Revised themes
 - Industry/manufacturing 4.0
 - Manufacturing workforce services to include employee recruitment, retention and employee development
 - Supply chain management and resiliency
 - Artificial intelligence application
- Strategic Competitions and Network Learning
 - Closeout meetings for concluding CAP projects will be open to the Network
 - Communicate programs and materials for the benefit and use of the Network
 - Projects that have been highlighted or will be in the coming months include
 - FloridaMakes: Aero-Flex Pre-Apprenticeship held final presentation on June 22
 - New York MEP: Capital Region Innovation Resource Center
 - Georgia MEP: Food Safety Compliance and Management for Small Food and Beverage Processors
 - INNOVATE Hawaii: Smart Talent
 - University of South Dakota: Technology Adoption Center for Increased Competitiveness
 - Missouri Enterprise: Food Safety in the Heartland
 - Montana MEP: NW Food Safety Modernization Act
 - Tab Wilkins Emerging Leaders Program
 - Cohort 1.13 started April 2021
 - 14 participants from 12 Centers
 - NIST MEP is working with a contractor for a program refresh
 - Topic workshops being developed: Influence, entrepreneurship, developing solutions to challenges, leading people
 - New Center Director orientation
 - Completed June 2-3
 - 10 new MEP Center Directors and four Subrecipient Directors
 - Included a virtual laboratory tour: MEP Assisted Technology and Technical Resource (MATTR) Cooperative Research and Development Agreement project
 - New Center staff orientation
 - May 27
 - Over 80 participants

NIST MEP: National Network Support

- 2021 Center reviews
 - Panel reviews, conducted during the third and eighth year
 - Eighth-year panel reviews for Arizona and Maryland completed in February 2021
 - Eighth-year panel review for Nebraska coming up in August 2021
 - Secretarial reviews, conducted during the fifth year – determination for second five-year cooperative agreement
 - Round 3 and 4 Centers (total of 24 Centers) will have their year five annual/secretarial reviews in Spring/Fall 2021
 - Annual reviews
 - 48 Centers, including 24 going through a year five/secretarial review
- MEPNN Center Leadership Team (CLT)
 - Defined priority areas for the year
 - Recent discussion on CLT Regional Nodes calls include Center's business updates, expansion of MEP, diversity and inclusion, and addressing the workforce problem at the manufacturer level
 - The structure improves access directly to CLT members and ensures that everyone in the National Network has a voice
- CLT members
 - Buckley Brinkman (Wisconsin), Tom Bugnitz (Colorado), Mike Coast (Michigan), Bill Donohue (Virginia), Carrie Hines (ASMC), Rob Ivester (MEP Acting Director), Ethan Karp (Ohio), Kathie Mahoney (Rhode Island), Mark Schmit (NIST MEP), Jim Watson (California)
 - New members: Alyssa Rodrigues (Alaska), Jennifer Sinsabaugh (New Mexico), Tiffany Stovall (Kansas)
- FY 2021 CLT Priorities
 - Multistate engagements, Bill Donohue, lead
 - How can Centers, working together, better exploit opportunities for increased market penetration, increase reported economic impacts and improved efficiencies in service delivery?
 - Go-To Center collaboratives, Mike Coast, lead
 - Go-To Centers are Centers that have expertise and capacity in a technology or service to share with the Network. Go-To Centers are ready to provide assistance remotely or in person to Centers in need of their expertise or service to use as a solution for local small and medium-sized manufacturers (SMMs). A Go-To Center will also have the responsibility for their area of expertise to maintain and update Center capabilities, tools and services for the Network.
 - Creating greater Network alignment, Jim Watson and Mary Ann Pacelli, co-leads
 - To establish a collaborative environment between NIST MEP staff, partners and the CLT, representing MEP Centers, creating a unified approach to developing and implementing National Network strategies, priorities, programs and initiatives.
 - Leveraging MEP's convening power, Ethan Karp, lead
 - Understand, benchmark and share how MEP Centers can lean into the role of convener. Enable more MEP Centers to convene, and to do so in a way that enhances their mission, clients, financial strength and the overall health of American manufacturing and the National Network.

- Creating a collaborative vision/strategy on behalf of the National Network, Buckley Brinkman, lead
 - How will we reconcile the multiple visions and strategies active throughout the MEP National Network? How do we create a vision big enough and a strategy strong enough to pull together the entire National Network?
- MEPNN Extension Services
 - Historically
 - NIST MEP, MEP Centers and partners/stakeholders work together to identify and develop technical assistance services that are delivered by MEP Centers to U.S. manufacturers
 - Primary focus on MEP Center services to manufacturers
 - NIST MEP provides subject matter expertise and national/strategic guidance in key technical/service areas
 - Operate MEPNN working groups in programwide strategic focus areas (e.g., advanced manufacturing technology/Industry 4.0, cybersecurity, food industry services, MATTR, supplier scouting, Toyota Kata)
 - Identify and develop new opportunities to help U.S. manufacturers
 - Identify, develop and maintain partnerships at national, state and local levels
 - Going forward
 - Continue National Network service offerings and support in needed areas
 - Evolve to emphasize new focus on supporting the needs of U.S. manufacturing in addition to U.S. manufacturers via the primary areas of anticipated MEP program expansion
 - Expanding the base program
 - Doing more of what Centers currently do for more manufacturers
 - Focusing on new MEP program initiatives
 - Supply chain development
 - Manufacturing technology demonstration facilities
 - Workforce services
 - Supply chain development
 - Develop more resilient supply chains in industries determined to be critical to U.S. national/economic security or public health
 - Provide MEP assistance to companies in these supply chains at all tiers to increase resilience of both individual companies and overall supply chains
 - Leverage MEP Supplier Scouting to increase domestic content in supply chains for federal procurements
 - Manufacturing technology demonstration facilities (MTDFs)
 - Establish and operate MTDFs around the nation as part of state-based manufacturing ecosystems
 - Each MTDF focused on a specific key product/technology area determined to be critical to U.S. national and economic security or public health
 - Workforce services
 - Focus on MEP Center provision of services to recruit, retain and retrain the workforce needed by the U.S. manufacturing sector
 - Expanding the base MEP program
 - Continue to provide traditional MEP Center services to SMMs
 - Improve/increase service portfolio of all Centers
 - Increase clients served nationally

- Increase projects conducted nationally
- Increase impacts generated by the MEP program

Discussion

- P. Moulton asked if 10 new Center Directors is typical or if they are seeing higher than usual turnover.
- W. Lequin responded that the last Center Director orientation held in October 2019 had eight new Center Directors participating. R. Ivester followed up that this was not out-of-the-ordinary turnover.
- M. Newman asked if the definition of MTDF includes robots and cobots that can be brought to a manufacturing operation to demonstrate how they can benefit manufacturers.
- R. Ivester said these are included and the definition was intentionally left broad in order to allow Centers and manufacturers flexibility.
- P. Moulton suggested partnering MTDFs with higher education institutions so they can provide both demonstration and workforce development specific to that equipment. She also asked how these facilities will differ from other research and development operations.
- R. Ivester agreed with the idea of pairing MTDFs with workforce development services, and also with supply chain development gaps and needs. He said they were not proposing to build new bricks-and-mortar facilities, but will be looking to partner with organizations to use existing resources. As NIST MEP is not a research organization, they will be focusing primarily on what manufacturers need in order to get to product deployment.
- L. Byars said it is in the entire Network's interest to follow the priorities, utilize collaborations and use these facilities to make the nation's supply chains stronger.
- R. Aguerrevere said we should leverage resources, leverage what we've already established and partner with schools to get this off the ground.
- M. Magee said there is clearly a great opportunity to partner with higher education, but scaling up technology into the rest of an organization is a real challenge.
- J. Anaya said demonstration centers are excellent recruitment tools for young people as technology drives interest in manufacturing.
- G. Spottswood emphasized the importance of mobility for areas with less access to these kinds of facilities.
- D. Bockoven said many of these facilities already exist across the country and could be used in supply chain development efforts. It's important to map and leverage what exists.

Operational Update

- NIST campus location status
 - All NIST staff including NIST MEP staff were on mandatory telework from mid-March until early July 2020, and now on maximum telework through at least July 19, 2021
 - NIST phased re-opening emphasizes employee safety and focuses on laboratory staff having access to labs
 - NIST staff remain on maximum telework: 90% of all staff teleworking for an extended period and returning in later phases, with on-site access limited to 25% or less
 - NIST MEP Move Back In Committee has met monthly and Building 301 office construction has nearly concluded
 - A reopening plan is due to the Office of Management and Budget by June 19
- NIST MEP organizational update
 - Tricia Faccone joined NIST MEP as an Administrative Officer, Finance Management and Center Operations Division
 - Shanell Williams joined as a detailee in the Center Operations Group

- Stephen Campbell is serving as Acting Group Manager in the Program Evaluation and Economic Research Group
- Jose Colucci-Rios, Resource Manager, Regional and State Partnerships Division, will begin a detail to the Department of Homeland Security on July 2

MEP National Network 2017-2022 Strategic Plan Update

- Most 18-month measures of success have been met
 - Measure 1: Consensus within integrated MEP National Network
 - Reach Network consensus on definition of client project and client manufacturing establishment interaction
 - Historic program definitions of terms have been identified and catalogued
 - Currently working to determine path forward in light of programmatic growth
 - Working group of Center Directors established
 - Measure 2: Center and program office operational excellence
 - Four elements measured
 - Progress plan
 - Progress data
 - Success story
 - Survey confirmation
 - Baseline (Quarter 2, 2019)
 - 40 Centers reported on time with the first three elements
 - 24 Centers reported on time across all four elements
 - Progress to date (Quarter 1, 2021)
 - 44 Centers reported on time with first three elements (+10%)
 - 33 Centers reported on time across all four elements (+38%)
 - Measure 3: Increased visibility by amplifying Network brand awareness by at least 10%
 - #MEPNationalNetwork hashtag occurrences
 - Baseline: 334
 - Progress to date (through March 31, 2021): 674
 - Goal: 367
 - Change: +102%
 - Brand mentions
 - Baseline: 125
 - Progress to date: 280
 - Goal: 138
 - Change: +124%
 - Manufacturing Innovation blog subscribers
 - Baseline: 24,920
 - Progress to date: 38,555
 - Goal: 27,412
 - Change: +55%
 - Backlinks
 - Baseline: 104
 - Progress to date: 183
 - Goal: 114
 - Change: +76%

- Social media followers
 - Baseline: 16,240
 - Progress to date: 18,248
 - Goal: 17,864
 - Change: +12%
 - Measure 4: Increase projects and new clients
 - Increase projects by 10%
 - Baseline: 14,109
 - Progress to date: 18,288
 - Goal: 15,520
 - Change: +30%
 - Increase new clients by 5%
 - Baseline: 4,101
 - Progress to date: 5,972
 - Goal: 4,306
 - Change: +46%

National Network Expansion – Planning for the Future

- Manufacturing at NIST: Positioned for growth
 - Manufacturing a key priority: Expand MEP and Manufacturing USA
 - Executive orders call for more federal purchases to be made in America (EO 14005) and shoring up America’s key supply chains (EO 14017).
 - National Defense Authorization Act of 2020 (NDAA) authorizes Manufacturing USA institute on semiconductor manufacturing and calls for NIST analysis of potential MEP national supply chain database
 - American Rescue Plan appropriated \$150 million to NIST for Manufacturing USA Pandemic Response Projects
 - Administration has proposed to increase FY 2022 MEP investment to \$275 million and Manufacturing USA to \$166 million
 - American Jobs Plan and the President’s budget request call for long-term investment increases in manufacturing at NIST, including \$7 billion for MEP and \$3 billion for Manufacturing USA
- MEP program’s planned expansion: why and how we will grow
 - Challenge/need
 - U.S. manufacturing is critical to the nation’s economic recovery
 - The president has proposed historic levels of infrastructure investment
 - MEP role
 - Increase capabilities to respond to manufacturing needs (EO 14017)
 - Identify initiatives for recruiting and retaining workers
 - Initiate a national supply chain initiative (EO 14005)
 - Create manufacturing technology demonstration centers
 - Impact
 - More manufacturers will receive critical assistance
 - MEP Centers can provide expanded services
 - MEP will lead the way to building a new manufacturing ecosystem
- Increase core funding to MEP Centers at least 25%
 - Challenge/need
 - MEP Centers lack resources to serve all the needs of all manufacturers
 - Proposed infrastructure investment demands greater U.S. manufacturing

- MEP role
 - Provide direct support that better enables manufacturers
 - Enable MEP Centers to deliver more diverse and comprehensive services
 - More effectively partner with and leverage other key stakeholders
- Impact
 - MEP Centers will provide services to at least 25% more manufacturers
 - More materials and products will be made in the U.S.
 - U.S. manufacturing economy will be stronger and more resilient
- MEP national workforce development initiative
 - Challenge/need
 - As many as 2.1 million manufacturing jobs will be unfilled through 2030
 - U.S. could have more than 2.1 million unfilled jobs without strong action
 - Worker shortage could cost the U.S. economy up to \$1 trillion by 2030
 - Systems and resources that can support manufacturers are often not connected
 - Unemployed and underemployed workers can help grow the industry
 - Recruiting this untapped talent pool requires addressing systemic barriers
 - MEP role
 - MEP Centers will help manufacturers attract a new workforce to manufacturing
 - MEP Centers will upskill the workforce – focus on women and underrepresented groups
 - Impact
 - Increase in manufacturers with upskilling programs
 - Increase manufacturing companies on best places to work list
 - Increase women and people of color in manufacturing jobs
- MEP national supply chain initiative
 - Challenge/need
 - Pandemic emphasized U.S. dependence on global supply chains for goods
 - Significant U.S. domestic manufacturing base gaps exist
 - MEP role
 - Partner with federal agencies and private top-of-supply-chain entities to identify supply chain gaps
 - Expand national MEP Supplier Scouting
 - Assist individual U.S. manufacturers to become more resilient
 - Impact
 - Key products and critical technologies (EO 14017) will be more effectively and comprehensively sourced domestically
 - U.S. supply chains will be more resilient
 - More robust domestic supply strategies
 - More visibility into lower tiers
 - Increased diversification of manufacturers' customers and markets
 - Improved risk management
 - Improved manufacturer operational agility
- MEP manufacturing technology demonstration facilities
 - Challenge/need
 - U.S. manufacturing: 11.4% U.S. economic output, employing greater than 8.5% of the workforce
 - Nearly 99% of all U.S. manufacturing establishments have less than 500 employees
 - Approximately 91% have fewer than 100 employees

- SMMs employ approximately 71% of domestic manufacturing workforce
 - SMM technical sophistication lags behind that of large companies
 - SMMs need assistance to bridge the gap between their state of practice and the state of the art available in supply chains
 - MEP role
 - Establish manufacturing technology demonstration facilities
 - Expand the MATTR service
 - Impact
 - Higher technology adoption by SMMs for key products and technologies (EO 14017) such as:
 - Industry 4.0, artificial intelligence, Industrial Internet of Things, additive manufacturing
 - Advanced materials
 - Broadband technology
 - Cybersecurity
 - Semiconductors
 - Food
 - Medical equipment/supplies
 - More technically skilled workers
 - Increased SMM productivity

Discussion

- R. Aguerrevere emphasized that when talking about supply chain resiliency or manufacturing resiliency, MEP needs to focus on how to get SMMs to be competitive on a global stage through adoption of technologies.
- P. Moulton said MEP can play a key role in helping bring multiple SMMs together to obtain a critical mass around training or educational opportunities.
- M. Magee said this is exciting, but also scary because it is a major change for the MEPNN. They should not lose sight of the fact that Centers operate as little businesses unto themselves, which makes the MEPNN unique.

Legislative Update

Speaker: Chancy Lyford, Division Chief for NIST MEP External Affairs, Performance and Support Division

Three major legislative initiatives among many, as well as executive orders, that mention MEP

- U.S. Innovation and Competition Act of 2021, Senate bill S. 1260, as it passed the Senate, status of USICA as of presentation
 - Allows for a substantial increase in the NIST MEP budget authorization of \$330 million
 - Within the USICA, a new Expansion Award Program allows NIST MEP to commence to issue additional funds
 - The president's budget request released recently also proposes an increase of \$125 million
 - These increases are indeed historic and are being negotiated at unprecedented highest levels

- Cost share relief
 - Centers have waived the cost share under the current statutory authority for the specialty awards and have historically accounted for a tiny amount of NIST MEP's budget
 - Allocated \$50 million in CARES Act funding did not require cost share
 - With a substantial increase for NIST MEP it is imperative that Centers be given the opportunity to scale up these services without the burden of match
- National supply chain database, not just an NDAA issue
 - S. 849, Supply Chain Vulnerability Assessment Act of 2021
 - S. 869, National Manufacturing Guard Act of 2021
 - H.R. 1024, Supply Chain Resiliency Act of 2021
 - H.R. 1186, Supply Chain Security and Pharmaceutical Authentication Act of 2021
 - S. 1556, a bill to require a report on the feasibility and benefits of establishing a supply chain center of excellence
 - And 33 others – including addressing the supply chain, more than 139 separate pieces of legislation have been introduced in the past five months alone

Discussion

- R. Ivester said NIST MEP has been instructed to work with the Centers to have them bring their own databases together into a single supply chain database from which NIST MEP and the MEPNN could draw.
- L. Byars said the Centers have done so much work gathering information, it is a delicate situation asking them to hand it all over to the national database. Assembling the Centers' information in a way that users can easily extract what they need when gaps in the supply chain are identified would benefit the manufacturing sector and make the MEPNN more valuable from a legislative perspective.
- C. Hines said there is discussion of having another bill on the national supply chain database introduced in July and she expects it to be wrapped into the next version of the NDAA. If the bill does not survive in the NDAA, there is authorization through the Expansion Award Program to move forward.

MEP Advisory Board Working Group Updates

MEP National Network Strategic Plan 2023-2028 Working Group

Speaker: Rob Ivester, MEP Acting Director

Committee members

- Board leadership: Kathay Rennels
- Board members: Don Bockoven, Kevin Heller, Mary Isbister, Willie May, Matt Newman, Jim Wright
- Ex officio support: Bernadine Hawes, immediate Past Chair, MEP Advisory Board
- NIST MEP support: Cheryl Gendron, Rob Ivester, Wiza Lequin

Working group deliverable

- To provide long-term program direction, guidance and perspectives for the MEPNN Strategic Plan for 2023-2028. The working group will consider feedback from Centers, stakeholders, partners, management and staff as the plan is developed

Strategic planning is the foundation to support the MEP program's planned expansion

- Increase core funding to MEP Centers at least 25%
- MEP national workforce development initiative
- MEP national supply chain initiative
- MEP manufacturing technology demonstration facilities

Strategic planning timeline

- Sept. 22, 2020: Discussions begin at the MEP Advisory Board meeting
- Feb. 2 and 9, 2021: The Strategic Plan Working Group (SPWG) met twice
- Feb. 23, 2021: SPWG presented foundational information at the Board meeting
- April 28, 2021: SPWG met and determined four focus group topics. Focus groups include volunteers from the Board – some members of the SPWG, other Board members, immediate past Board Chair, Bernadine Hawes, and select NIST MEP staff (members of each focus group listed below)
- May-June 2021: Focus groups met to discuss MEP priorities for the future
- June 16, 2021: SPWG met to review plan for discussion at Board meeting

NIST MEP seeks the Board's feedback on the following questions

- How will we know we are successful?
- How will we know when to pivot?
- What are the global/national cues to monitor?
- Who/what are our greatest leverage points?
- How can we hold ourselves accountable?
- How will we measure progress towards success?
- How would progress toward success be reflected in the current IMPACT scorecard?

Next steps

- Continued focus group meetings through the summer
- Next set of 18-month goals for the current strategic plan developed with input considered from Board and other internal and external groups
- Next set of goals shared and continued discussion at the end of August during the MEPNN Update Meeting and Board meeting
- Continuing to organize and plan for the next iteration of the MEPNN Strategic Plan 2023-2028

Discussion

- D. Bockoven provided some context for the upcoming discussions, including the need to consider how the long-term strategic plan factors into addressing the U.S. trade deficit and that recent studies show that the country will face a shortage of 2.1 million manufacturing workers by 2030.
- M. Newman said we're at a pivotal point as we move from concept to legislation to action – how do we motivate Centers to activate and work towards a unified vision? He'd rather Centers be working with manufacturers and manufacturing than raising matching funds.
- P. Moulton said that Centers are great for making connections and have massive leveraging points, but the client has to be willing to participate. Additionally, most SMMs have a desire to develop and grow but lack the capital or people to make it happen. A lot of innovation can happen with a little incentive.
- R. Ivester said that cost share under the Code of Federal Regulations allows for a broader set of what constitutes contributions. Some Centers have made it clear that it is important to have manufacturers co-investing because it is a strong indicator of their dedication to the success of a project. Working through the complexity of that is challenging but an important part of expanding

assistance to manufacturers and helping them make contributions to the broader manufacturing sector.

- J. Wright agreed that reducing the U.S. trade deficit should be a key measurement of success. The success measurement should not just take into account the quantity of the deficit, but also the quality when the labor shortage is taken into account. He asked what types of federal initiatives are being considered to look at reshoring higher value jobs.
- R. Ivester said the national supply chain database could be a tool in addressing some of these complicated issues. The EOs discussed earlier include prioritized manufacturing subsectors. They are not necessarily looking to plug every gap in the supply chain associated with these key industries, but to assess each of the gaps for possibilities for applying technologies to make a domestic entity competitive on the global stage. These will be technically demanding and sophisticated and so by their nature higher value.
- R. Aguerrevere suggested working on technology dissemination and adoption up and down the value stream as a way to address the worker shortage and trade deficit. SMMs are doing great work but may not have the resources to deploy in an effective manner those technologies that will make them resilient and competitive.

MEP National Network Strategic Plan 2023-2028 Focus Group – Overarching Resilience

Speakers

Dave Stieren, Division Chief for NIST MEP Extension Services Division

LaDon Byars, MEP Advisory Board

Bernadine Hawes, immediate Past Chair, MEP Advisory Board

Focus group key points

- MEP Centers have been very active in the area of resilience, particularly during the pandemic.
- Becoming resilient means gaining situational awareness by examining all of the data inputs on a manufacturer's business environment in order to understand the potential risks and then position the company to manage those risks.
- One of the most critical aspects of SMM resilience is the workforce.
- In order for supply chains and the manufacturing sector to be resilient, individual manufacturers within those supply chains must also be resilient. If manufacturers are not resilient there is no way to get a resilient workforce.
- For businesses that have pivoted their operations during crises, how do they then transition that new operation over to a partner SMM after they return to their normal operations in order to maintain the critical pivot business?
- It may be helpful to do something similar to exit interviews of manufacturers that have gone out of business to see what might be done to prevent future businesses from experiencing the same fate.
- Measurement of resilience is a challenge but may include
 - Analysis of company resources
 - Stability of the workforce
 - New business opportunities available
- MEPNN could help by establishing toolkits to build a framework, looking at their strategies and assessing if they are truly a learning organization.

Discussion

- M. Magee said there are many kinds of crises that can interrupt manufacturing. Developing a toolkit as a way to look at raw materials and supplies and one's distribution network that would allow for qualitative assessments of where risks are would be helpful.

- M. Newman said data gathering tools can show the potential risks within an organization. Manufacturers may bolster themselves for some events, but there are always unforeseen disasters. He asked what kinds of tools the Centers have to conduct an audit of an organization’s enterprise.
- D. Stieren said a group of MEP Centers have been engaged in addressing the issue of what MEP Center assistance means and should mean in the area of resilience. In conjunction with that, they are in the process of developing a framework, one aspect of which is a repository of all of the different types of assessments, tools, trainings and technical assistance approaches that Centers are using as they engage with companies in this space.
- L. Byars noted that, for most SMMs, reactive efforts are always going to have precedence over proactive efforts. Sustainability does not equal resilience – a manufacturer can be agile, effective, responsive and do well financially, but not be resilient due to not knowing the risks from a manufacturing standpoint. The assessments are critical but very challenging.
- B. Hawes said NIST MEP should develop a typology of issues that confront manufacturers.
- M. Magee suggested that NIST MEP create a resiliency scorecard for the manufacturing industry as a whole in addition to tools to do assessments of individual manufacturers.
- P. Moulton suggested it’s not a single set of measures. Lots of different plans are needed to address lots of different measures and different potential responses to different crises.
- R. Aguerrevere said regional assessments are needed in addition to a nationwide approach.
- B. Hawes said that the manufacturing sector is embedded in many other sectors and they need to look at pairing with others in the event of a crisis.

MEP National Network Strategic Plan 2023-2028 Focus Group – Reshoring

Speakers

Rob Ivester, MEP Acting Director
 Don Bockoven, MEP Advisory Board
 George Spottswood, MEP Advisory Board

Focus group key points

- NIST MEP does not envision bringing manufacturing activity back to the U.S. in its prior domestic form. Reshored manufacturing may not be conducted as was previously the case, and reshored manufacturers may instead manufacture in a different way.
- Reshoring is about global competitiveness at the individual organizational level.
- The MEP program is well-positioned to help manufacturers enhance their competitiveness. They already offer a suite of services to help manufacturers be competitive, but they may be able to offer more or use those services in new ways.
- EO 14005 and EO 14017 provide a focus on specific industry segments which would be good early targets.
- Reshoring should also include “near-shoring,” such as Mexico, for semicritical industries.
- Further questions for the MEP Advisory Board to address
 - What other services does NIST MEP need to be considering?
 - How can they accelerate technology adoption?
 - How can they leverage anticipated trends, such as circular economic systems, as ways to promote reshoring and resiliency?
 - How do you measure all this to know whether you’re making progress?
 - How can jobs in manufacturing be marketed in a more effective way for the future workforce?
 - Many organizations/sectors are thinking about these topics. Which would be best to collaborate with in order to leverage resources that are already available?

Discussion

- G. Spottswood suggested that near-shoring noncritical industries to Mexico could be a win-win. Also, the jobs created by reshoring will need to be filled, and we're short on people.
- L. Byars said raw materials are not always available domestically. Environmental and other factors have left us in a delicate situation.
- M. Magee noted a connection to the presentation on supply chain resilience and said good quantitative tools are needed for manufacturers making sourcing decisions on whether to use overseas suppliers versus paying more for a domestic supplier.
- M. Newman said there are initiatives underway focused on reshoring manufacturing into states or service areas. There is an opportunity to expand the network of contacts to others trying to bring manufacturing into their area.
- P. Moulton agreed, but noted that MEPNN would need to be careful on the extent to which they engage in this activity. MEP is in a good position to provide technical information to the state economic development agencies for them to act on. Need to be careful the information is used to lure companies from overseas – not from one state to another.
- J. Anaya said that in order to find enough workers, we need to think more broadly about the potential workforce pool and reach out to nontraditional manufacturing employees.

MEP National Network Strategic Plan 2023-2028 Focus Group – National Supply Chain

Speakers

Mark Schmit, Division Chief for NIST MEP Regional and State Partnerships Division

Matt Newman, Chair, MEP Advisory Board

Mary Isbister, Vice Chair, MEP Advisory Board, contributing member of focus group, unable to attend this meeting

Focus group key points

- An assessment of the current U.S. manufacturing capability infrastructure is needed.
- Beyond the priorities outlined in the EO, what are the next 20, 50, 100 items that are critical for a national supply chain?
- NIST MEP needs to refine and define the problem. Some items for consideration include
 - What are the top elements to enable resilient and flexible supply chains in areas of national importance?
 - Are the elements for supply chains different from other priorities such as workforce, productivity, advanced manufacturing, etc.?
 - How is NIST MEP uniquely positioned to address supply chain challenges and not be duplicative of other federal and state efforts?
 - What can NIST MEP do on the demand side and what can they do on the supply side?

Discussion

- M. Magee said there is a lot of overlap with the supply chain resiliency and reshoring. One of the biggest challenges for manufacturers during the pandemic was demand and supply becoming so out of sync. How can those signals be improved? A supply chain database is critical from a manufacturing standpoint, but from a manufacturer standpoint supply planning and demand planning are pertinent.
- P. Moulton said that some of the supply chain issues the U.S. experienced during the COVID-19 pandemic made it clear that the siting of domestic providers is a key concern for customers being able to access their products in an emergency.

- M. Newman suggested MEP might engage in encouraging entrepreneurs to pivot into different market space and helping to identify the best location – where there’s a cluster of a particular supply chain.
- R. Aguerrevere said that many people do not realize how much the U.S. is currently unable to produce because the global supply chain has been so efficient and effective for so long. A national supply chain database would allow users to see where there are gaps and significant issues.
- M. Newman added that the database would allow Centers to engage in deeper conversations with clients on what areas they could pivot into and what opportunities are available to companies to fill supply chain gaps with their existing capacity.
- M. Magee said that NIST or another agency must have information on vulnerabilities and available critical materials that have been identified from a strategic standpoint.
- M. Newman said that each state’s department of environmental quality has data on what natural materials are available within the state.
- R. Ivester said that NIST has some information available but it has been gathered for different purposes. There have been previous EOs that included gathering information on critical materials as one of their elements. There is a good collection of resources to draw from but not one single all-encompassing information source.
- M. Newman asked if there is an opportunity to bring all of these studies of critical materials together into one place at the Department of Commerce level that could then percolate down to the MEP program to implement filling out the supply chain.
- R. Ivester said the information sources are publicly available and more can be brought in as needed. They have a good idea of who to go to for some help, but MEP would have to do some heavy lifting to get it to where they need it to be.
- L. Byars emphasized the importance of recognizing that manufacturers have gotten used to getting their materials at good prices with several sourcing options. Having to reestablish what realistic lead times look like and what the right amount of inventory to maintain would require a shift in attitudes toward others within the same manufacturing ecosystem. Doing this without changing our economic system is a big challenge.
- P. Moulton said that environmental concerns are not insurmountable, but require good planning. She also suggested looking into partnering with existing networks to get information to states on their natural resources and development opportunities that could supply a critical supply chain need.

MEP National Network Strategic Plan 2023-2028 Focus Group – Workforce

Speakers

Mary Ann Pacelli, Division Chief for NIST MEP Network Learning and Strategic Competitions Division

Jose Anaya, MEP Advisory Board

Mitch Magee, MEP Advisory Board

Kathay Rennels, MEP Advisory Board, contributing member of focus group, unable to attend this meeting

Focus group key points

- Workforce issues predate COVID and will continue to be a challenge in the coming years.
- While the educational community is very strong in many places and can develop people in basic skills, many SMMs would benefit from Centers’ help improving their customized on-the-job training for their workforce.

- In the post-pandemic environment, companies are increasingly comfortable with virtual or blended learning approaches for their employees.
- Apprenticeships and internships are increasing, as are efforts to reach into underserved or underrepresented populations and programs working with the recently incarcerated, returning vets and out of work youth.
- NIST MEP’s website identifies six areas of workforce resources where MEPNN can help companies address all stages of the employee lifecycle
 - Apprenticeships
 - Leadership development – supervisory skills, communicating, etc.
 - Skills training – lean, specific operation, etc.
 - Smart Talent – recruitment, engagement, etc.
 - Training within industry (TWI) – a specific job training methodology
- Further questions for the MEP Advisory Board to address
 - How many of these tools are being leveraged throughout the Network?
 - Do some of them need further development/nurturing?
 - Should any be deprioritized?
- A lot of the work that the Centers currently do is workforce development, but there may soon be major changes to the funding and charge of NIST MEP that requires them to think differently about their approach.
- Strategic considerations
 - What does “workforce development” mean, especially to MEP clients?
 - What roles do MEP Centers, NIST MEP or the MEP Advisory Board play in workforce development?
- Tactical considerations
 - How to keep focused – both national and MEP Centers?
 - How do MEP scorecards and measures help or hurt?
 - How do Centers get “credit” for programs that don’t necessarily generate sales?

Discussion

- P. Moulton said that it would be helpful to get clarity from companies on what skills they need from their workforce so that they can inform higher education institutions, state-funded training programs and state departments of labor on how to allocate their resources. The Workforce Investment Opportunity Act requires every state to have a workforce development board that collects information about workforce needs, how to set up a workforce system, et cetera. Tying the MEP program into that network would be a good idea. It is not necessarily the Centers’ role to deliver specific job training, but rather to make the connections and help companies examine their own needs more clearly.
- J. Anaya said that the idea of MEP Centers plugging into state workforce ecosystems and adding value is very promising.
- M. Newman asked if the U.S. is approaching a point in the country’s history where we just don’t have the population to supply higher education with eligible candidates.
- J. Anaya said the K-12 population is shrinking in his area and that is affecting higher education’s ability to teach the future workforce. His institution had to make a decision whether to shrink to fit the existing population or to expand into other areas of the population. They chose to retool in order to attract a newer demographic of students.
- M. Newman asked if MEPNN might have a role in helping organizations adapt to the cultural changes that come along with this shift. J. Anaya believed they should.
- D. Bockoven stressed the importance of introducing manufacturing to kids as early as grammar school.

- P. Moulton said her area has seen negative growth of its workforce age population. Federal policies are needed around what credentials are recognized from other countries in order to take advantage of what people with J-1 visas can offer.
- R. Aguerrevere said the key to addressing issues around workforce, competitiveness, resiliency and the ability to reshore is going to be productivity. SMMs must invest in technologies that are going to make them less labor-intensive and more productive.
- J. Anaya said that they work with their local MEP to understand what industry needs and then infuse additional education into their programs to ensure that when their students leave the programs they understand newer technologies and can introduce them to the SMMs that employ them.
- L. Byars suggested that a key is being resourceful and strategic to use all the untapped workforce that's available – work-release, nontraditional, part-time in the middle of the day, caregivers, students, flexible schedules – all of this in a manufacturing environment.

Supply Chain Development Working Group

Speakers

Don Bockoven, MEP Advisory Board

Dave Stieren, Division Chief for NIST MEP Extension Services Division

Committee Members

- Board Leadership: Don Bockoven
- Board Members: Ray Aguerrevere, LaDon Byars, Mary Isbister, Matt Newman
- NIST MEP Support: Rob Ivester, Dave Stieren, Mark Schmit

Working Group Deliverable

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

MEP National Network Extension Services

- Historically
 - NIST MEP, MEP Centers and partners/stakeholders work together to identify and develop technical assistance services that are delivered by MEP Centers to U.S. manufacturers.
 - Primary focus on MEP Center services to manufacturers
- Going forward
 - Continue MEPNN service offerings and support in needed areas
 - Evolve to emphasize new focus on supporting the needs of U.S. manufacturing in addition to U.S. manufacturers via the primary areas of anticipated MEP program expansion, which includes supply chain development

Supply chain development

- Develop more resilient supply chains in industries determined to be critical to U.S. national/economic security or public health
 - Provide MEP assistance to companies in these supply chains at all tiers to increase resilience of both individual companies and overall supply chains
 - Impact manufacturers from the bottom up; impact manufacturing from the top down

- Improving manufacturer resilience at the individual company level is necessary to improve overall supply chain resilience – representing a unique opportunity for the MEP program
- Leverage MEP Supplier Scouting to increase domestic content in supply chains for federal procurements

Topics for MEP Advisory Board consideration

- Manufacturer resilience involves operating in a situationally aware state across a company's entire business environment that positions a company to be both responsive and proactive regarding change.
 - How might MEP Centers be successful in garnering attention of reactive-only companies who aren't receptive to transformational approaches?
- MEP assistance focused on improving the resilience of individual manufacturers contributes to the improved resilience of overall supply chains.
 - Impacts would combine bottom-up approach for manufacturers with top-down approach for manufacturing.
 - How might this be demonstrated?
- There are key supply chains identified in EO 14017 calling out semiconductors, high-capacity batteries, critical materials and pharmaceuticals.
 - In addition to these, what other supply chains might the MEP program target?

Discussion

- R. Aguerrevere said that Centers need to be more engaged because manufacturers do not necessarily know to come to them and the Centers do not have sufficient labor to reach all of the manufacturers in their area. They need to figure out how to get the word out and add resources to be able to reach SMMs that would benefit but do not even know they need the help.
- M. Magee said that SMMs are receptive to what Centers can offer, but given that the Centers are themselves small and medium-sized, is there a possibility to leverage the entire network for systems integration?
- D. Stieren said that MEP Centers have been making significant progress in their ability to deliver services in Industry 4.0 areas, including cybersecurity, through a fairly heavy leveraging of third-party service providers. When Centers identify good service providers, there is a significant amount of sharing information across the MEPNN.
- M. Newman said that when looking for manufacturers who can pivot into new areas, it is essential to identify companies that have the culture and mindset to pivot and capture that in the supply chain database discussed during this meeting. 80% of the opportunities may come from only 20% of the manufacturers in a state, but Centers should continue to look for ways to work with the others.
- D. Stieren said a lot of verified and validated data about manufacturing companies' capabilities is available at the federal level.

Executive Committee Working Group

Speaker: Cheryl Gendron, NIST MEP and Designated Federal Officer, MEP Advisory Board

Committee Members

- Board Leadership: Mary Isbister, Vice Chair, MEP Advisory Board
- Board Members: Mitch Magee, Pat Moulton, Matt Newman, George Spottswood
- NIST MEP Support: Cheryl Gendron, Rob Ivester, Wiza Lequin, Phill Wadsworth

Working Group Deliverable

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

Discussion Topics for the Board

- Center Board Outreach Program
 - The goal is to create a board-to-board exchange of information and communication that will strengthen the MEP National Network
 - Creation of subset of working group for outreach
 - Coaching and mentoring to assist with efforts
 - New questions developed into the summer/fall
- Succession planning for membership
 - Growing list of candidates: qualifications/federal statutes/various demographics are reviewed by NIST MEP leadership
 - Two candidates currently in the vetting pipeline
 - One or two additional candidates to be added in the fall
 - Large cohort leaving in 2023 (seven members)
 - Goal: 15 members, with members starting service and rolling off in sync each year, spring and fall
- 2020 MEP Advisory Board Report
 - Documents an unprecedented year
 - MEP Advisory Board members are encouraged to share it with their industry network
 - Available on the MEP Advisory Board website
- Are there things that NIST MEP can do to better support the MEP Advisory Board?

Discussion

- M. Magee said that the outreach program is a great way to make connections and has a positive impact on the effectiveness of MEP Advisory Board members and the entire MEPNN.

Wrap-Up/Public Comments

Public Comments

- There were no public comments.

Concluding Comments

- R. Aguerrevere said the increased attention NIST MEP is getting and possibly the funding that will come with it will enable them to execute on the things they have been discussing, which are mission-critical to the success of the nation.
- D. Bockoven said this is an exciting time to be able to play a role in reshoring manufacturing and leave a legacy for future generations.
- L. Byars said that manufacturers have to share their experiences of challenging times so that the MEPNN can grow stronger and more capable of supporting the nation's manufacturing base.
- M. Magee said the MEP program has done an incredible job pivoting and being able to support the whole Network throughout an unprecedented year.
- G. Spottswood said MEP's role in defining U.S. manufacturing has never been as large or as important as it is now for the country.
- M. Bahar was pleased to hear about the working group efforts and how aligned the parties are and also how well the MEPNN is working together.

- R. Ivester said it has been an honor and a privilege to work with everyone during a very challenging but also uplifting period.
- M. Newman said they were at the precipice of an incredible opportunity for the country to reshore and expand its manufacturing base. He has confidence that they can get the work done to benefit future generations.

Next Meeting

The next MEP Advisory Board Meeting is set for Aug. 31, 2021, either virtually or in Phoenix, Arizona.

Adjournment

With no further business, M. Newman adjourned the meeting at 4:14 p.m.