# National Institute of Standards and Technology
## Manufacturing Extension Partnership
## Advisory Board
## Minutes of the September 15, 2019 Meeting
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## Background

The Department of Commerce (DOC), National Institute of Standards and Technology (NIST), Manufacturing Extension Partnership (MEP) Advisory Board (Board) met in an open session from 8:30 a.m. to 3:30 p.m. on Sept. 15, 2019 at the Atlanta Marriott Marquis in Atlanta, Georgia. The meeting included about 56 attendees including Board members, NIST and NIST MEP staff, participants from MEP Centers, guest speakers and observers. Carroll Thomas, Director of MEP, is the Designated Federal Officer for the MEP Advisory Board.

## Attendees

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

**NIST and NIST MEP Participants**
Walter Copan, Under Secretary of Commerce for Standards and Technology and Director, NIST
Cheryl Gendron, Advisory Board Liaison, NIST MEP
Mark Schmit, Division Chief, Regional and State Partnerships Division, NIST MEP
David Stieren, Division Chief, Extension Services Division, NIST MEP
Carroll Thomas, Director of MEP and Designated Federal Officer, MEP Advisory Board
Phillip Wadsworth, Resource Manager, NIST MEP

**Guest Speakers**
Jim Watson, CEO and President, California Manufacturing Technology Consulting (CMTC) and Chair of the MEP National Network™ Center Leadership Team (CLT)

**Observers**
Don Bockoven, Fiber Industries LLC
David Boulay, Illinois Manufacturing Excellence Center (IMEC)
Mickele Bragg, Geotech Environmental Equipment and Manufacturer's Edge Board of Directors
Buckley Brinkman, Wisconsin Center for Manufacturing & Productivity (WCMP)

Tom Bugnitz, Manufacturer's Edge
Monica Claussen, NIST MEP
Mike Coast, Michigan Manufacturing Technology Center (MMTC)
Jose Colucci-Rios, NIST MEP
Dusty Cruise, Missouri Enterprise
Nadine DeJesus, NIST MEP
Bonnie Del Conte, Connecticut State Technology Extension Partnership (CONNSTEP)
Bill Donohue, GENEDGE
Jennifer Hagan-Dier, Manufacturers' Edge
Joe Heim, Impact Washington
Carrie Hines, American Small Manufacturers Coalition (ASMC)
Sekou Johnson, NIST MEP
Anna Kan, Citizens Business Bank and Board of Directors CMTC
John Kennedy, New Jersey Manufacturing Extension Program (NJMEP)
Ik Kwon, St. Louis University and Board of Directors Missouri Enterprise
Wiza Lequin, NIST MEP
Willie May, Morgan State University
Craig Mayberry, PESCO, Inc. and Board of Directors New Mexico Manufacturing Extension Partnership (NM MEP)
Kevin McIntyre, NIST MEP
Petra Mitchell, Catalyst Connection
Aneesa Muthana, Pioneer Service Inc. and Board of Directors IMEC
Keith Phillips, Alabama Technology Network (ATN)
Ben Rand, Insyte Consulting
Katie Rapp, NIST MEP
Stephen Ritchie, The Doe Run Resources Corporation and Board of Directors Missouri Enterprise
Cheryl Rybka, Texas Manufacturing Assistance Center (TMAC)
Jennifer Sinsabaugh, NM MEP
Chuck Spangler, South Carolina Manufacturing Extension Partnership (SCMEP)
Lise Stewart, EisnerAmper
Mike Stone, Stone & Associates
Dileep Thatte, NIST MEP
Ben Vickery, NIST MEP
Thomas Williams, NIST MEP
Charles Yancey, Retired (formerly NIST MEP)
Bob Zider, Vermont Manufacturing Extension Center (VMEC)

## Welcome and Introductions

**Speakers:**
  Bernadine Hawes, Chair, NIST MEP Advisory Board
  Carroll Thomas, Director, MEP
  Walter Copan, Director, NIST MEP

B. Hawes made introductory remarks. W. Copan thanked Board members for their time and dedication and emphasized the value that MEP adds to the nation, which was recognized by the Government Accountability Office (GAO) in their recent report. Board members and attendees introduced themselves.

# MEP Director's Update

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

MEP Program Budget Outlook (as of Aug. 21, 2019)
- Fiscal Year (FY) 2019 Appropriation Status:
  - The appropriation was signed into law on Feb. 15, 2019.

- FY 2020 Appropriation Status:
  - Proposed for elimination of federal funding in the President's Budget.
  - The House mark came back at $154 million.
  - The Senate mark is proposed for completion by the end of September, date TBD.

NIST MEP FY 2019 Projected Spend Plan
- Available Funding:
  - Full year appropriation: $140 million.
  - Carryover from FY 2018: $6.5 million.
  - Funding from other agencies: $2.8 million.
    - Total available funding: $149.3 million.

- Planned Expenditures:
  - Center renewals: $117 million.
  - Strategic competitions: $10 million.
  - Contracts: $4.8 million.
  - NIST MEP Labor: $8.7 million.
  - NIST and Program Overhead: $7.8 million.
    - Total planned expenditures: $149.3 million.

Special Reports – Requirements of the American Innovation & Competitiveness Act (AICA)
- Government Accountability Office (GAO) Report Part 1: Report Completed.
  - From AICA due two years after enactment Jan. 6, 2017 in consultation with this Board, the GAO conducted a report on the cost share impact due to the legislative change.
  - The report was made public on March 7, 2019. It can be found at: https://www.gao.gov/products/GAO-19-219
- NIST Report on MEP Center Recompetition: Report Completed.
  - The NIST Director shall submit to Congress a report on the first and second years of operations for Centers from the recompetition. The report provides details on the engagement in services provided by Centers, the characteristics of services provided and the volume and type of services.
  - The report has been completed and submitted to Congress and it is available on MEP Connect.
- GAO Report Part 2: Report Forthcoming.
  - A final report on cost share is required after three years of the date of the above GAO study, March 7, 2022. The NIST Director is required to contract with an independent organization to revisit the initial GAO report and again may consult with this Board.
  - NIST MEP is in the process of identifying a third party contractor.

MEP National Network: Center Leadership Team (CLT)
- The CLT is part of the National Network, which also includes the Advisory Board, NIST MEP, the MEP Centers, the Center Boards, the Foundation for Manufacturing Excellence (FORME) and the ASMC.
- At least 31 out of 51 MEP Centers are actively involved.
- Working Committees with MEP Center leaders:
  - Outreach Initiative (Tom Bugnitz).
  - Multi-state Engagement (Bill Donohue).
  - Learning (Buckley Brinkman).
  - Network Evolution (Bonnie Del Conte).
  - Manufacturing Technology Solutions (Mike Coast).
  - Communications (Jim Shillenn).

Industry 4.0 Activity and Practices Across the Network
- The CLT Committee on advanced manufacturing (AM) technology solutions is addressing MEP Center practices and small and medium-sized manufacturer (SMM) needs.
- MEP Centers are partnering with Manufacturing USA Institutes. A Notice of Funding Opportunity (NOFO) is forthcoming from NIST as a follow-on to embedding projects and Empire State Development Corporation (ESD) is seeking to hire an Industry 4.0 expert.
- Cybersecurity practice is maturing across the Network.
- MEP Centers are utilizing user/demonstration facilities.
- Smart Manufacturing connections are occurring between MEP Centers and NIST.
- MEP Centers are featured at Industry 4.0-related conferences and events.

NIST MEP Extension Services Division
- Connecting MEP Center Clients with NIST Labs – MEP-Assisted Technology and Technical Resource (MATTR).
  - Expanded to provide NIST MEP compensation to NIST Labs to deepen NIST Lab assistance to small manufacturer clients of MEP Centers.
  - An MEP National Network working group has formed to broaden MEP Centers' leverage of NIST Labs – expansion of the current MATTR Steering Team.
  - A NIST Council of Lab Liaisons is forming to provide a MATTR point of contact (POC) at each NIST Lab.
- Food Industry Services.
  - The MEP National Network Steering Team is leading national capabilities development, which is evolving into an MEP National Network Working Group.
  - A national Memorandum of Understanding (MOU) was signed and executed with the Food and Drug Administration (FDA) on Aug. 1, 2019.
  - A new special project award was made from NIST MEP to the NJMEP to further develop MEP National Network service capabilities across the U.S.

NIST MEP on the M.O.V.E.: "MEP on Virtual Engagement"
- In November 2018, 55 NIST MEP staff members were sharing a temporary space; heavy telework was required.
- As of August 2019, all NIST MEP staff members have temporary work space locations in three buildings throughout the campus.
- NIST MEP staff could be back into Building 301 by December 2020.

MEP Organization Chart
- The MEP Deputy Director has retired and Chancy Lyford has taken over as the Acting Associate Director. Duties of the Deputy Director are spread among the other four Division Chiefs as well.
- Mary Ann Pacelli is now the Acting Division Chief for the Network Learning & Strategic Competitions Division.
- Kevin McIntyre is now the Division Chief for the Finance Management & Center Operations Division.
- Mark Schmit is now the Division Chief for the Regional and State Partnerships Division.
- All five Division Chiefs currently report to Carroll Thomas.

## NIST MEP Policy Academy Overview

**Speaker:** Mark Schmit, Division Chief, Regional and State Partnerships Division, NIST MEP

Manufacturing Extension Partnership
- Partnerships are essential to the MEP National Network and key partners include:
    - Economic Development Organizations.
    - Technology Resources.
    - Primes and Original Equipment Manufacturers (OEMs).
    - Professional Societies.
    - Trade Associations.
    - Federal Partners.
    - State Partners.

Why States?
- States have resources, both financial and non-financial.
    - They leverage federal investments to deliver value-added services to manufacturers to help them grow and prosper.
- States have connections through their investments in places like universities, community colleges, technical schools, economic development organizations and public schools.
    - They nurture the ecosystem that supports manufacturing directly and indirectly.
- The MEP Program is premised on a partnership model that includes state, regional and local stakeholders along with private industry as co-investors.
- Investing resources in MEP Centers allows states to leverage federal investments and expand their ability to work with more manufacturers for a larger economic impact.
- The MEP Program is not political, but it exists in a political world.

Why Do the Policy Academy?
- For states, it is an opportunity to identify issues and opportunities requiring attention in the state and propose approaches (levers, policies, practices, initiatives) for further investigation and possible investment.
- For the MEP National Network it is a chance to be part of the conversation and bring groups together while embedding MEP Centers into what's happening.

At the Table
- States submit applications and choose their teams.
- The team can involve:
    - State economic development agencies.
    - Key legislators or staff members.

- o Governors' economic development advisors.
  - o Manufacturers.
  - o State MEP Directors.
  - o The financial community.
  - o Key regional partners such as universities, chambers and economic development organizations (EDOs).
  - o Relevant state agencies (e.g. workforce).
- Teams consist of seven to ten people in pivotal roles in the design, execution and evaluation of a state's improved manufacturing policy.
- Team members participate as appropriate in the in-state site visits and strategic planning meetings as well as webinars, conference calls and in-state groundwork for developing the strategy.

Focus Areas
- Addressing talent gaps.
- Accelerating business start-ups and scale-ups.
- Promoting exports and diversified customer bases.
- Enhancing supply chain linkages for both big and small companies.
- Improving economic development ecosystem efficiency.

Potential Outcomes
- Invigorated state leadership.
- New programs and initiatives.
- Revised program design and delivery.
- Legislation supporting manufacturing priorities.
- Executive orders and other actions.
- Improved economic development ecosystem efficiency.

Right Now
- Ten states are currently participating in a Policy Academy: Arizona, Colorado, Illinois, Maine, Maryland, Missouri, North Carolina, Pennsylvania, Vermont and Wisconsin.

**Discussion**
- C. Thomas asked M. Schmit to address the history of the Policy Academy and what is different about the current version. M. Schmit said that the current cohort is their third cohort and with this version they are doing a better job of embedding the MEP Centers into the process and the program discussions.
- J. Kennedy spoke about his experience in the second cohort of the Policy Academy and said that there were many good elements as well as many things that needed to be changed. He agreed with M. Schmit that they forgot the MEP National Network element and said that his state contacts in New Jersey were left without a clear idea of what MEP National Network does. Since that time the Policy Academy team has worked hard to change that and have seen many of the changes being implemented.
- T. Bugnitz said that many states have trouble working with their state economic development organizations and spoke about his experience with the Colorado MEP (Manufacturer's Edge). They were able to incorporate the state governor's economic development priorities into the Policy Academy proposal, establishing the MEP Program as a resource for the state economic development group and demonstrating that the MEP Program is focused on helping the states achieve their goals.
- C. Thomas pointed out that the Policy Academy is helpful for leveraging partnerships, championing manufacturing and empowering manufacturers, all of which are important to the MEP National

Network strategic plan. It is also tied into the strategic plan that NIST MEP is developing to funnel more NIST resources through the MEP Centers to the manufacturers that need them.

- M. Magee asked whether changes in administration affect the Policy Academy and how Center Directors balance the responsibilities of the Academy with their other tasks. M. Schmit said that the MEP Program exists in a political world and it is in their interest to maintain evolving relationships with state leadership. Center Directors help with that in many ways in the course of their daily jobs, including through the Policy Academy.
- B. Hawes asked whether, at the NIST MEP level, they look at the relationships between MEP Centers and the state and the Centers' performance. M. Schmit said that they do and NIST MEP tries to line up their goals with what they see happening in states so that everyone can do well and take credit for it. J. Watson spoke about the CMTC and the data they relayed to the State of California with help from NIST MEP, demonstrating the impact of manufacturing on California's economy and the public good. The state responded well and CMTC received state money for the first time in fourteen years.
- M. Newman asked if there was a mechanism to use advocates from the states that fund and support their manufacturers to network and open doors in states that are not as supportive. M. Schmit said that was an ever-evolving, ever-present part of what NIST MEP needs to do.

## NIST Cyber Competitive Awards Program (CAP) Award Update

**Speaker:** David Stieren, Division Chief, Extension Services Division, NIST MEP

D. Stieren reviewed the Authorizing Legislation for the NIST MEP Competitive Awards Program:
- 15 USC 278 k-1: Competitive Awards Program.
    - o Establishment: The Director shall establish within the Hollings Manufacturing Extension Partnership under section 278k of this title and section 278l of this title a program of competitive awards among participants described in subsection (b) of this section for the purposes described in subsection (c).
    - o Participants: Participants receiving awards under this section shall be Centers, or a consortium of Centers.
    - o Purpose, themes and reimbursement:
        - ▪ The purpose of the program established under subsection (a) is to add capabilities to the Hollings Manufacturing Extension Partnership, including the development of projects to solve new emerging manufacturing problems as determined by the Director, in consultation with the Director of the Hollings Manufacturing Extension Partnership, the MEP Advisory Board, other Federal agencies and SMMs.

NIST MEP CAP Award Summary
- From 2017-2019, NIST MEP has made 22 special CAP funding awards to MEP Centers totaling $19.278 million.
    - o 2017: 7 awards totaling $5.139 million.
    - o 2018: 8 awards totaling $7.041 million.
    - o 2019: 7 awards totaling $7.098 million.
- The awards addressed a broad array of topics, including:
    - o Go-to Centers for cybersecurity assistance.
    - o Industry 4.0 technology acceleration.
    - o Multiple workforce topics.
    - o Food Safety, Toyota Kata, Additive Manufacturing.

- o Medical device supply chains.
- Program authority is also used for Special Competitions such as Embedding, Manufacturing Disaster Assistance and Cybersecurity for Defense Manufacturing.

CAP Award Highlight 1 – Quality Safe Efficient Food Industry Network
- Lead MEP Center: NJMEP.
- Participating MEP Centers:
  - o Georgia MEP.
  - o Montana Manufacturing Extension Center.
  - o Nebraska MEP.
  - o Ohio MEP.
  - o Plus, potentially all MEP Centers around the National Network.
- Project terms:
  - o $992 thousand over a two-year period of performance.
  - o Aug. 1, 2019 start date.
- The project builds on previous NIST MEP CAP awards to MEP Centers relating to Food Safety Training and the Food Safety Modernization Act (FSMA).
- It creates a platform for MEP Centers to deliver FSMA, other core MEP products, services (e.g. cybersecurity, supply chain) to food manufacturing (FM) companies.
- Project deliverables:
  - o Compilation, development and digital warehousing of FM Project Engagement Tools.
  - o Access to more robust FM market intelligence.
  - o National branding and marketing strategy.
  - o Coordination of MEP Center training and support via regional hubs.
  - o Protocols for MEP Centers to coordinate service delivery for projects that involve FM supply chains across multiple states.
  - o MEP National Network information sharing.

CAP Award Highlight 2 – Cybersecurity for Defense Manufacturing
- Lead MEP Center: MMTC.
- Participating MEP Centers:
  - o Commitments to participate from 44 MEP Centers at the time of proposal preparation, including: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Oklahoma, Oregon, Pennsylvania, Puerto Rico, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington and Wisconsin.
  - o More Center commitments after proposal submission and award – essentially the entire MEP National Network is now on board.
- Project Terms:
  - o $1.074 million over a 17-month period of performance.
  - o An Aug. 1, 2019 start date.
- The project is conducted in conjunction with a NIST MEP – Department of Defense (DoD) Interagency Agreement funded by DoD.
- It provides guidance and hands-on assistance to small and medium-sized defense contractors in understanding and implementing Defense Federal Acquisition Regulation Supplement (DFARS) cybersecurity requirements.
  - o The MEP Centers will not be ensuring compliance with DFARS; they will work with companies to help them understand what they need to do to become compliant.

- The target is to reach over 1,000 defense contractors.
- Cybersecurity priorities addressed by this project include:
  - Identification of geographic areas in the U.S. with a high concentration of defense contractors and means to serve these contractors via the MEP National Network.
  - Awareness/educational outreach events, both in person and online.
  - Hands-on technical assistance activities.
  - Use case development and implementation for manufacturing operational technology protection.
  - Enhancement of MEP National Network cybersecurity assistance services.

CAP Award Highlight 3 – Industry 4.0 Technology Acceleration Program
- Lead MEP Center: Oregon.
- Participating MEP Centers: Illinois, Michigan, New Mexico, Ohio, Pennsylvania, South Carolina and potentially all MEP Centers around the National Network.
- Project Terms: $1 million over a one-year period of performance and an Aug. 1, 2019 start date.
- The project connects viable Industry 4.0 resources (I4.0) to small U.S. manufacturing companies via MEP Centers.
- Technical assistance providers that can work with typical MEP Center clients are generally not well-known or vetted for performance.
- The project will:
  - Identify and vet appropriate I4.0 vendors that can serve the MEP Center client profile.
  - Adopt new technologies from among the list of nine distinct I4.0 technologies.
  - Identify MEP National Network-approved "Go-To MEP Center leads" to provide consistency of product delivery, train-the-trainer material to MEP Center staff nationally and continuing research and development (R&D) of manufacturing applications that touch I4.0 nodes.
  - Provide a clear path for SMMs to connect with experts in the MEP National Network through MEP Center leads and/or approved providers.

**Discussion**
- M. Coast spoke about the process for CAP Award Highlight 2 and said that he views the CLT's efforts with Industry 4.0 as product development for the MEP National Network. This initiative uses a train-the-trainer approach to avoid having to reinvent the same solutions multiple times.

## MEP National Network 2017-2022 Strategic Plan Update

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

MEP National Network 2017-2022 Strategic Plan Goals
- Empower Manufacturers.
  - Objective: To assist U.S. manufacturers in embracing productivity-enhancing, innovative manufacturing technologies; navigate advanced technology solutions; recruit and retain a skilled and diverse workforce.
- Champion Manufacturing.
  - Objective: To actively promote the importance of a strong manufacturing base as key to a robust U.S. economy and for the protection of national security interests; create awareness of innovations in manufacturing; create workforce development partnerships to build a stronger and diverse workforce pipeline; maximize market awareness of the MEP National Network.

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

**Discussion**
- C. Thomas shared her recent research and ideas about data analytics and the Strategic Plan to prepare NIST for the future of manufacturing. She said that on her recent visits to manufacturers she noticed that those who have embraced advanced manufacturing techniques understand that those techniques are heavily dependent on data. NIST MEP and the MEP National Network will focus on capturing this data to help achieve their strategic goals. She also spoke about the importance of stakeholders and a middle-out system of shared ecosystems rather than a top-down approach. This includes building trust and managing for the mission, not for metrics.

Strategic Plan Mapped to National Network
- Empower Manufacturers:
  - Primary: 51 Centers and the CLT.
  - Collaborative Support: Extension Services.
  - Important Support: NIST MEP Leadership; Regional and State Partnerships Division (R&S); Network Learning & Strategic Competitions Division (Network Learning & Comp); Marketing & Communications Group (M&C); Program Evaluation & Economic Research Group (PEER); Finance Management & Center Operations Division (FM/Center Ops); Administrative; IT/Security.
- Champion Manufacturing:
  - Primary: 51 Centers and the CLT; NIST MEP (Extension Services, M&C, R&S Partnerships, NIST MEP Leadership); Advisory Board; Center Boards; ASMC and FORME.
  - Collaborative Support: Network Learning and Comp; PEER.
  - Important Support: FM/Center Ops; Administrative; IT/Security; Staff Resource Management.
- Leverage Partnerships:
  - Primary: 51 Centers and the CLT; NIST MEP (Extension Services, M&C, NIST MEP Leadership, R&S Partnerships); Center Boards.
  - Collaborative Support: Advisory Board; ASMC/FORME; PEER.
  - Important Support: Admin; FM/Center Ops; IT/Security; Staff Resource Management.
- Transform the Network:
  - Primary: 51 Centers and the CLT; NIST MEP (All).
  - Collaborative Support: Advisory Board; Center Boards; ASMC/FORME.

Eighteen-Month Network Priorities
- Create an Integrated MEP National Network Service Delivery System.
- Updated National-level Partnerships and Performance Support Services.
- Define Areas of Focus for Manufacturing Technology Advances.

- Develop Supply Chain National Services and Information and Technology Access.
- Build Infrastructure for MEP National Network Learning Organization.

Measures of Success: Baselines
- Integrated National Network:
    - The number of MEP Centers in multi-Center delivery projects.
- Efficiency in Small/Rural Engagements:
    - The number of engagements through third party partnerships and increased longer-term impactful projects.
- Center and Program Office Operational Excellence:
    - The number of MEP Centers participating and number of implementation projects in the Program Office.
- Increased Visibility:
    - MEP National Network brand awareness.

Progress on Eighteen-Month Measures of Success to Goals
- Integrated MEP National Network – Percent of Goal as of Quarter Two 2019:
    - 88% of MEP Centers engage in Multi-Center Delivery.
    - 230% of SMMs served via third party.
    - 168% of rural manufacturers served via third party.
- Integrated MEP National Network – Percent of Goal as of Quarter One 2019:
    - Number of Transformational Clients: 154%.
    - Job Impact: 193%.
    - Sales Impact: 228%.
    - Investment Impact: 163%.
    - Cost Savings Impact: 119%.
- Quarter Two MEP National Network Progress:
    - 370 instances of branded searches vs. baseline of 350.
    - 763 page views on the webpage vs. baseline of 695.
    - 88 backlinks vs. baseline of 14.
- MEP Centers:
    - Nine MEP Centers (Arizona, Arkansas, Kentucky, Maine, Puerto Rico, South Dakota, Vermont, West Virginia and Wyoming) have 100% of their clients responding to the NIST MEP client impact survey this most recent quarter.
    - 11 Centers maintained consistent performance from FY 2018, Quarter One to FY 2019, Quarter One. Centers that achieved 100 on the IMPACT metrics in both periods include Arkansas, Hawaii, Indiana, Maine, Michigan, Oklahoma, Pennsylvania, Puerto Rico, South Carolina, South Dakota and Vermont.
    - 31 Centers exceeded the unique client served metric in FY 2019, Quarter One. The client served metric standard is 73 clients per $1 million of federal investment.
- NIST MEP:
    - Expanded MEP Center financial best-practices reviews to include all 51 MEP Centers.
    - The Office of Management and Budget (OMB) published the 2019 MEP Uniform Guidance Single Audit Compliance Supplement.
    - Improved communications and collaboration between Resource Managers (RMs) and Federal Program Officers (FPOs).
    - All MEP Center renewals were processed on time to the Grants Management Division (GMD).

Eighteen-Month Goals Moving Forward
- Consensus Within the Integrated MEP National Network:
    - Reach MEP National Network consensus on the definition of Project and client manufacturing establishment (CME) interaction.
- Center and Program Office Operational Excellence:
    - Operationally improve reporting via measurement of on-time and accurate reporting.
- Increase Projects and New Clients:
    - Increase reported projects by 10% and reported new clients by 5%.
- Increased Visibility:
    - Amplify and measure MEP National Network brand awareness by at least 10%.

Baselines Moving Forward: Eighteen-Month Measures of Success
- The current baseline for projects is 14,109 projects                    and the goal is to increase that by 10%.
- The current baseline for new clients is 4,101 new clients and the goal is to increase that by 5%.
- Increased awareness of the MEP National Network brand by 10% over base brand recognition measurement.
- The baseline will be established using data collected in FY 2020, Quarter One and will be measured quarterly moving forward.
- Measures of brand awareness to include:
    - Backlinks.
    - Online occurrences of key MEP National Network terms such as "MEP National Network."
    - MEP National Network social media reach and engagement.
    - NIST MEP social media followers/new followers.
    - Manufacturing Innovation blog subscribers/new subscribers.
- The Dashboard will indicate aggregated quarterly progress with featured highlights.

Operational Excellence: Eighteen-Month Measures of Success to Goals
- Operationally improve reporting via measurement of on-time reporting and accurate reporting.
- Show the baseline measurement of on-time reporting and accurate reporting to measure progress against the goal.

**Discussion**
- L. Byars commented that the multi-MEP Center engagement goal might show more improvement with increased metric/mission alignment. C. Thomas said that that goal has to do with how projects are reported and there are some multi-Center projects that are not necessarily reported accurately as involving multiple MEP Centers.
- M. Magee asked how the baseline compared to percentage increases in the last couple of years and C. Thomas said that there has been a 12.9% increase in the past four years and that is what is required to meet their ten-year goal of tripling the number of clients and quadrupling the number of impacts.
- B. Ziger said that it was important to have engagement and buy-in from the MEP Centers in the process of developing goals and asked if there was an internal process to take into account the MEP Centers' feedback. C. Thomas said that they would focus resources on MEP Centers that can still improve and that the goal is not for each MEP Center to increase projects by 10%, but for the network of MEP Centers to increase their projects by 10%.
- B. Brinkman said that the Centers are uniquely positioned to help SMMs with upcoming threats like cybersecurity, but it is difficult to take advantage of those opportunities when they do not

have enough people. Centers will need to combine resources and organize them in a way that benefits the entire Network.

## Board Engagement with the MEP National Network

**Speakers:**
  Bernadine Hawes, Chair, NIST MEP Advisory Board
  Phillip Wadsworth, Resource Manager, NIST MEP
  Jim Watson, CEO and President, CMTC and the Chair of the MEP National Network CLT

About the MEP Advisory Board
- The statutory purpose of the Board is to provide advice and recommendations to the NIST Director on the following items:
  - The activities, plans and policies of MEP.
  - The soundness of MEP's plans and strategies.
  - Current performance in relation to the MEP Program.
- The Board is made up of representatives from areas such as economic development, state and municipal affairs, manufacturing industry and community colleges.

MEP National Network CLT is Focused on Engaging Centers
- Infrastructure:
  - MEP National Network CLT Governance.
  - Multi-State Engagement Process.
    - Developing protocols to simplify the process for staff members.
    - An MOU has been signed by 45 MEP Centers.
  - Committee participation.
    - The committees are inclusive, with 25-30 MEP Center Directors participating.
- Communications:
  - Integration with NIST MEP and FORME.
  - Developing Content.
- Expand Industry 4.0 Capabilities.
  - Establishing "Go To" MEP Center Collaboratives and Satellites:
    - These MEP Centers have resident expertise in certain technologies and have successfully deployed that expertise in their states and they have the ability to train other MEP Centers.
  - Repository for MEP Center Expertise and Best Practices.
  - Regular structured Learning Sessions.

**Discussion**
- M. Magee asked if they could compile a list of the MEP Centers of Excellence. M. Newman suggested that it would be helpful to have a dynamic web-based application, like an MEP LinkedIn, where people could search for resources. C. Hines said that FORME's MEP University (MEPU) has the capability to share the MEP Center and staff expertise and in the coming months MEP Centers will be able to access those resources.

Combined MEP Advisory Board and Center Board Leaders: Roundtable Discussions
- Each table was assigned a specific question or topic.
- Local MEP Center Board Chairs were matched with MEP Advisory Board Members and NIST MEP Resource Managers.

- Three roundtable discussion questions:
  - o Moving Forward: Eighteen-month goals of increasing reported projects and new clients – how can MEP Center Boards support their MEP Centers in reaching those goals?
  - o If you could write a letter to the Department of Commerce (DOC) or to Congress, what would you identify as your state's biggest manufacturing challenges and what help, resources or information would you like to see?
  - o The MEP National Network: How do we learn from one another, stay connected and take full advantage of the MEP National Network's resources?

**Discussion**
- A. Muthana's group emphasized the importance of manufacturing facilities' testimonials in support of the MEP Program, as well as sponsorships and branding.
- M. Bragg said that her group would like to see more ways of defining impact in a way that is not just related to projects. Holding lunch and learn sessions and sponsoring award ceremonies, among other efforts, could expand influence and help bring in new clients. They also recommended conducting more research around user interface and a branding campaign aimed at the American public to emphasize the importance of manufacturing for the U.S. economy.
- M. Magee shared his group's discussion about expansion and educating MEP Center Boards about who their stakeholders are. They talked about growing the talent pool, cybersecurity and a recommendation to share case studies from manufacturers who have benefitted from the MEP Program's services.
- G. Spottswood's group talked about the importance of understanding and communicating the needs of local state manufacturers. They suggested that the MEP Center Boards adopt some responsibility in taking on new clients and that the MEP Center Boards and MEP Centers maintain an emphasis on metrics.
- J. Wright said that his group agreed on the importance of value added to the MEP National Network and making sure that database resources are user-friendly. They commended the connection between the MEP Advisory Board and the Center Board Chairs and suggested a continued focus on networking.
- L. Stewart spoke about the Board initiative of the past few years involving the MEP Center Boards in strategic planning. New challenges are emerging for the MEP National Network's clients as well as for the MEP Centers themselves and this requires a shift from strategic planning to strategic thinking.

## MEP Advisory Board Working Group Updates

**Supply Chain Development Working Group**

**Speakers:**
Matt Newman, Vice Chair, MEP Advisory Board
Dave Stieren, Division Chief for Extension Services Division, NIST MEP

Committee Members
- Board Leadership:
  - o Matthew Newman.
- Board Participants:
  - o LaDon Byars, Bernadine Hawes, Mary Isbister, Chris Weiser.
- NIST MEP Support:
  - o Dave Stieren, Phil Singerman, Mark Schmit.

Working Group Deliverable
- Guidance and perspectives on the MEP National Network support and development of manufacturing supply chains with an emphasis on defense suppliers regarding Defense Industrial Base gaps; and expertise on who should be brought into the discussion to provide insight on defense supplier gaps.

Discussion Topics for the Board
- The MEP National Network supports DoD supply chains in many areas, highlighted by:
    - Cybersecurity assistance.
    - Working with the DoD-sponsored Manufacturing USA Institutes.
- NIST MEP seeks ongoing Advisory Board perspectives on these MEP National Network focus areas, approaches and challenges.

Manufacturing USA Institutes
- There are 14 operating Manufacturing USA Institutes.
    - Eight of the 14 institutes are sponsored by the DoD, five by the Department of Energy (DOE) and one by NIST.
- The Embedding Pilot Projects awards are either complete or nearing completion in 2020.
    - MEP Center staff members are embedded in all 14 Manufacturing USA Institutes.
- Initial results and learnings are summarized in the March 2019 report:
    - SMMs tend to explore opportunities before making decisions to commit or implement.
    - SMMs are interested in demonstration sites and interactive experiences that help them understand technologies.
    - SMMs are interested in state-of-the-art technologies that can be leveraged in the very near term, as opposed to R&D-based intellectual property (IP).
        - SMM needs must match Manufacturing USA Institute outputs.
    - Local resources (less than a two-hour drive) are particularly helpful for engagement.

Additional Updates
- NIST MEP is developing a NOFO for MEP Centers for release in 2020 as a follow-on to the Embedding Pilot Projects.
    - This will focus on Advanced Manufacturing Technology Services from MEP Centers to SMMs in the broad area of Industry/Manufacturing 4.0.
    - It will emphasize connectivity of physical and cyber systems in manufacturing factories and supply chains.
    - It will target market-ready, cross-cutting infrastructural technologies that can be applied across multiple industries, including:
        - Additive manufacturing, robotics, digital manufacturing, cybersecurity, smart manufacturing and others;
        - Automotive, aerospace, biomanufacturing, chemical, communications, defense, food, instrumentation, medical equipment and others.
    - Collaborations with technical resource entities at the national, state and local level are encouraged.

**Discussion**
- C. Thomas asked about a timeline and D. Stieren said that they have a draft form of the NOFO. They expect it to be posted by the end of 2019 or the beginning of 2020.
- M. Magee said that the Manufacturing USA Institutes were a great experiment, but this NOFO made sense because it is hard for SMMs to get into the R&D space. D. Stieren said that the

NOFO will encourage operation in this space for the MEP National Network and if it makes sense to partner with the Manufacturing USA Institutes, then they will.

Cybersecurity as of September 2019
- Development of the MEP National Network cybersecurity assistance for small manufacturers is progressing to a level of nationwide capability.
- Cybersecurity work continues to be spurred by strong partnerships with the DoD.
  - Office of the Undersecretary of Defense for Research and Engineering (OUSDR&E).
  - Office of the Undersecretary of Defense for Acquisition and Sustainment (OUSDA&S).
  - Office of the Chief Information Officer (OCIO).
  - Office of Economic Adjustment (OEA).
  - Defense Acquisition University (DAU).
  - Procurement Technical Assistance Centers (PTACs).
- Cybersecurity work remains mainly driven by DFARS requirements for the defense sector.

NIST Cybersecurity and Small Manufacturers Supplying to DoD
- National Defense Authorization Act 2019, HR 5515 (January 2018):
  - Section 1644, Assistance for Small Manufacturers in the Defense Industrial Supply Chain and Universities on Matters Relating to Cybersecurity.
    - "The Secretary of Defense, in consultation with the Director of the National Institute of Standards and Technology, shall take such actions as may be necessary to enhance awareness of cybersecurity threats among small manufacturers and universities working on Department of Defense programs and activities."
- National Defense Authorization Act 2020, HR 2500 (July 2019):
  - Section 853, Revised Authorities to Defeat Adversary Efforts to Compromise United States Defense Capabilities.
    - "The Secretary of Defense shall consult with the Director of the Hollings Manufacturing Extension Partnership (established under Section 25 of the National Institute of Standards and Technology Act (15 U.S.C. 278k)) to provide education, guidance and technical assistance to strengthen the cybersecurity of SMMs that provide goods or services in the supply chain for the Department of Defense."

Highlights: MEP Cybersecurity and the DoD
- The Interagency Agreement (IAA) between NIST MEP and OUSDR&E provides $1.074 million in special project award funding from NIST MEP to MEP Centers to serve cyber needs of small defense manufacturing suppliers between Aug. 1, 2019 and Dec. 31, 2020.
- The IAA is led by the MEP Center in Michigan; the target is serving 1,000+ small defense contractors.
- It will provide nationwide cybersecurity awareness, hands-on technical assistance and pilot operational technology (OT) protections.
  - This includes collaboration with NIST Labs.
  - It also includes collaboration with Manufacturing times Digital (MxD) Manufacturing USA Institute in Chicago.
- MEP Center participation is likely to occur in more than 20 states in addition to Michigan:
  - Alabama, California, Colorado, Connecticut, Illinois, Kentucky, Louisiana, Massachusetts, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Texas, Washington and Wisconsin.

Highlights: MEP Cybersecurity and NIST Laboratories
- NIST MEP and MEP Centers are working with NIST Labs to develop new NIST Implementation Guidance for the NIST Cybersecurity Framework Manufacturing Profile.
- MEP Centers are providing Use Cases from two representative small U.S. manufacturers that will be used by NIST Labs in the next iteration of the Manufacturing Profile Implementation Guidance.
- Activities funded by NIST MEP under NIST MEP – OUSDR&E IAA.
- Implementation Guidance from NIST Labs will:
  - Address OT vulnerabilities specific to manufacturing operations that are not covered by DFARS cybersecurity requirements.
  - Be pilot implemented at two participating manufacturers.

MEP National Network Cybersecurity Summary
- The U.S. manufacturing sector is still not showing much action for cybersecurity implementation in non-defense manufacturing industries.
  - Small manufacturer cyber protections are low relative to larger companies.
- MEP National Network is monitoring non-defense supply chains such as automotive and food processing.
- MEP Centers' provision of cybersecurity assistance to small manufacturers is demonstrating operation of the MEP National Network in the conduct of multi-Center assistance.
  - Cyber-in-a-Box is available to MEP Centers providing necessary information for MEP Centers to begin and operate cybersecurity assistance practice.

NIST MEP Cybersecurity Resources
- NIST Cybersecurity Framework:
  - Identify, Protect, Detect, Respond, Recover.
- NIST Small Business Cybersecurity Corner.
- NIST Special Publication 800-171: Protecting Controlled Unclassified Information in Nonfederal Information Systems and Organizations.
- NIST MEP Cybersecurity Self-Assessment Handbook for Assessing NIST SP 800-171 Security Requirements in Response to DFARS Cybersecurity Requirements.
- NIST Interagency/Internal Report (NISTIR) 7621 Revision 1: Small Business Information Security: The Fundamentals.

MEP National Network Progress: Cybersecurity Assistance Practice.
- As of September 2019, more than 3,200 SMMs served.
- More than 220 awareness and training events conducted by MEP Centers nationwide.
- More than 496 cybersecurity projects conducted for U.S. manufacturers by the MEP National Network since 2014.
- NISTIR 7621, Small Business Information Security: The Fundamentals has been downloaded over 132,000 times since it was published by Pat Toth of NIST MEP in November 2016.
- 19 MEP Centers have received around $9 million in OEA funding, focused on working with state-based organizations.
  - These awards are focused on cyber workforce training and education.
- NIST Handbook 162 has been downloaded about 60,000 times since it was published by Pat Toth in November 2017.
- The MEP National Network Cybersecurity Working Group (WG) holds meetings every 6 weeks.
  - A WG workshop was held in Orlando in May 2019.
  - A WG workshop was planned for September 2019 in Atlanta.

MEP National Network Cybersecurity Progress Summary as of September 2019
- Defense contractor cybersecurity implementation is still low.
- 46 MEP Centers in Cybersecurity Working Group.
- 45 out of 51 MEP Centers offer a cybersecurity practice.
- The MEP National Network has made significant progress and continues to move forward addressing important needs.

Additional Updates
- NIST MEP is engaging a Shared Assist collaboration of defense and aerospace primes on behalf of the MEP National Network.
  - They are collaborating to develop common approaches and trusted resources for supply chain implementation of cyber protection. The collaboration includes Lockheed, Northrop Grumman, Boeing, Raytheon and BAE Systems.
  - The collaboration resulted from spring 2019 executive level engagement between Lockheed leaders and the NIST Associate Director for Innovation and Industry Services, as well as NIST MEP leadership.
  - Leveraging MEP Centers to raise supply chain awareness and provide technical assistance based upon OEM common cyber approaches and trusted resources.
  - Exploring OEM participation in DFARS cyber awareness events around the country in 2019 and 2020.
- A new Cybersecurity Maturity Model Certification (CMMC) Program is being developed.
  - Every contract will be required to have a certification according to the maturity model and contractors will have to have the equivalent level of cybersecurity certification.
  - Planned implementation by early 2021.
  - NIST MEP is working with DoD to learn evolving details of this future new policy, including implications of its implementation.
    - An OUSDR&E representative participated in the WG Meeting in Atlanta.
  - NIST MEP is providing ongoing guidance to MEP Centers' approach.
    - The CMMC does not currently impact Centers' engagements with small defense contractors.
    - The CMMC does not currently negate or supersede DFARS requirements.

**Discussion**
- M. Isbister asked if there was an opportunity for the five defense contractors to form a consortium to help MEP Centers get their supply chains up and running. D. Stieren said that the Shared Assist includes recognition from the five contractors that they need to take a common approach to implementation and the contractors are very interested in working with the MEP National Network.
- W. Copan asked whether and how the MEP National Network will be a partner in delivering certification services. D. Stieren said that NIST MEP's guidance to MEP Centers is to stay the course and continue to serve as advisors for SMMs to help them understand certification and prepare to be certified. It is not clear who the certifying bodies will be and what they will require and this is another issue that DoD will need to face.
- B. Hawes said that they are on track to create a Manufacturing Commons with resources that can be distributed to anyone who needs it in the literary field. The Shared Assist is an opportunity to consider other parts of the supply chain that the Manufacturing Commons can incorporate and push out to SMMs through the MEP Centers.
- J. Wright asked if the special awards process includes learning about what new customers need and proliferating that out to more suppliers. D. Stieren said that it does and network sharing is a required element of the competitive awards program.

- W. Copan said that as work product is delivered to the manufacturing community that care should be taken because reports are seen translated into Chinese nearly immediately after they are released on the open internet. In this era of information-sharing, it is important to think about how to disseminate information for the greatest possible impact and benefit to the U.S. manufacturing economy.

**Executive Committee Working Group**

**Speakers:**
Cheryl Gendron,  Advisory Board Liaison NIST MEP
Phillip Wadsworth, Resource Manager, NIST MEP

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

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

Center Board Outreach Program
- Aims to enhance the strength of relationships between national and local boards.
- Learn about your assigned Centers.
- MAB Outreach Toolkit:
  - A list of your connections: States and MEP Centers.
  - Detailed MEP Center one pager for each.
  - Contact names and info, with names highlighted if they attended the Summit.

Discussion
- B. Hawes asked what a good next step would be for outreach and P. Wadsworth said that the first step would be to contact Center Board Chairs and set up a time to have a conversation with them.
- L. Byars said that the roundtable activity earlier in the day was a great springboard to facilitate this type of conversation and collaboration.

Board Activities in 2020
- Supporting and mentoring new members.
  - There are three new members on the horizon: Don Bockoven, Willie May and Kevin Heller.
  - Discussed role of mentors for the new members.
    - Participating in orientation webinar, accepting phone calls with questions.
- MEP Advisory Board succession in 2020:
  - Two members were recently renewed for a second term.

- o Most other members will be entering their second terms in 2020.
  - o Bernadine Hawes' second term will end in May 2020.
- New Working Group discussion:
  - o Strategic Plan for the next five years.
- Next face-to-face meeting.
  - o Tuesday, March 3, 2020 on the NIST Campus in Gaithersburg, Maryland.
    - ▪ There will be a Board Dinner and tour on Monday, March 2, 2020.
  - o Middle of June 2020, location TBD.
  - o Middle of September 2020, in conjunction with the MEP National Network Update Meeting and the FORME Best Practice Conference.

## Wrap-Up/Public Comments

Public Comments
- There were no public comments.

Concluding Comments
- G. Spottswood said that the meeting was well organized as usual and he was especially excited about the Center Board Outreach Program.
- C. Weiser agreed that the Outreach Program was very promising and said that he was inspired to go back to Arkansas and become more involved with his local MEP Center.
- K. Rennels said that she was able to meet one of her MEP Center Board contacts during this meeting and could reach out to him very soon. She said that she was looking forward to the Policy Academy and that her new position in the Colorado state university system puts her right in the governor's plan for rural manufacturing and rural ownership.
- J. Anaya said that he had one word for this meeting and it was cybersecurity. In California, MEP is putting many programs in place including Industry 4.0 and smart manufacturing, but that causes vulnerability. Cybersecurity needs to be their next focus.
- M. Magee said that he looked forward to becoming more actively involved with the MEP Centers and mentioned that he was also able to meet one of his contacts at the meeting. He praised NIST MEP's focus on networking, collaboration and problem-solving.
- L. Byars thanked the NIST MEP team for the opportunity to participate and serve as a voice for manufacturing. She said that she was encouraged to hear that others have a vested interest in the future of manufacturing in America and she looked forward to communicating that to the people she works with.
- J. Wright thanked Carroll Thomas for her recent visit to his region and the energy that she brings to the manufacturing groups that she visits.
- M. Isbister said that the MEP Program in Wisconsin saved her business at a critical time and she continues to benefit from her association with the passionate people at NIST MEP. She said that Carroll Thomas' legacy will be that of a united MEP Network and anticipated that in the future, MEP will bring resources and create the scale that is necessary to maintain America's preeminence in manufacturing and to regain what we have lost.
- C. Thomas thanked Board members for hosting her during her recent visits to their local manufacturers.
- W. Copan said that NIST MEP is trying to engage the whole organization to create the greatest possible synergy and that intelligent use of a resource is to create it once and then share it widely. He thanked Board members and Ms. Thomas for their efforts and invited them to share further ideas with him at any time.
- M. Newman said he liked the idea that manufacturing that is engaged with the MEP National Network is a better investment than those that are not engaged with the MEP National Network.

He said that the sum of the MEP Program is much more valuable than a single MEP Center and he was glad to be a part of that.

- B. Hawes said that her word for this meeting was embed because the meeting highlighted the different ways that all parts of the MEP National Network are embedded in each other. She thanked the Board members and the NIST MEP staff for all of their hard work.

## Next Meeting

The next Advisory Board Meeting is set for March 3, 2020 in Gaithersburg, Maryland.

## Adjournment

With no further business, B. Hawes adjourned the meeting at 3:25 p.m.