HOLLINGS MANUFACTURING EXTENSION PARTNERSHIP

ADVISORY BOARD REPORT 2013

MEP • MANUFACTURING EXTENSION PARTNERSHIP

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

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Letter From the MEP Advisory Board

The MEP Advisory Board had a very productive year in 2013. The Board welcomed new members and was empowered to assume a more direct role in providing input to the MEP program, including offering recommendations on the MEP cost share requirement, providing guidance on a new MEP strategic plan, and responding to the National Academies report.

The Advisory Board met for official business in June and September of 2013, and formed two sub-committees, one which tackled the issue of cost share requirement and met multiple times. The second sub-committee guided the strategic planning process and addressed the recommendations of the National Academies study. The members of the Board committed their time and expertise in service to and for the national MEP program.

Particularly rewarding for many of the members was attendance at MEP system meetings in June and July. While many of us serve on local MEP center boards, it is a fully enriching experience to listen to and benefit from the best practices that are exchanged between the national office and MEP centers, and from MEP center to MEP center. Much learning occurs at these system update meetings, and centers always leave these meetings feeling more informed and energized. So too did the MEP Advisory Board members who attended these sessions and spoke to and engaged with leaders from across the MEP system.

As we head into 2014 we remain convinced that MEP is the gold standard program for public private partnerships that provide high quality technical service to small and medium sized enterprises, increasing the competitiveness of U.S. manufacturing. It is with great sadness that we bid farewell to long-time board members and former Board chairs Mark Rice and Edward (Ned) Hill both of whom have terms that are expiring. Their seven years of dedicated service and thoughtful leadership leave the program in a significantly better place that all of its current board members will benefit from. We are most grateful to them.

Sincerely,

Dennis Dotson, Chairman
Dotson Iron Casting
Mankato, Minnesota

Vickie Wessel, Vice Chair
President of Spirit Electronics, Inc
Phoenix, Arizona

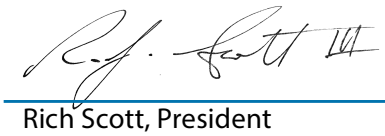
Roy A. Church, President
Lorain County Community College
Elyria, Ohio

Eileen Guarino, President & CEO
Greno Industries
Scotia, New York

Edward W. Hill, Dean
Maxine Goodman Levin College of Urban Affairs
Cleveland, Ohio

Kellie Johnson, President
ACE Clearwater Enterprises
Torrance, California

Mark Rice, President
Maritime Applied Physics Corporation
Baltimore, Maryland



Rich Scott, President
Quality Filters
Robertsdale, AL

Jeffrey Wilcox, Vice President for Engineering
Lockheed Martin Corporation
Bethesda, Maryland

Ed Wolbert, President
Transaco Products, Inc
Chicago, Illinois

About the Manufacturing Extension Partnership

The Omnibus Trade and Competitiveness Act of 1988 created the Manufacturing Extension Partnership program (MEP) to improve the competitiveness of U.S-based manufacturing by making manufacturing technologies, processes and services available. During the past two decades, MEP has focused on bridging the manufacturing productivity gap, identifying opportunities for growth, and encouraging technology deployment.

Growing from a pilot project of just three centers to a national network of 60 affiliated organizations, MEP provides its manufacturing customers with a wide array of fundamental services in business and process improvements. Today, the MEP Centers and their partners, including community colleges, associations, and private consultants provide manufacturers with the services needed to reduce bottom-line expenses and grow top-line profits, both necessary to thrive in the global marketplace.

MEP Centers throughout the U.S and Puerto Rico

About the Manufacturing Extension Partnership Advisory Board

In August 2007, Congress passed the America Competes Act (P.L. 110-69) establishing the Manufacturing Extension Partnership Advisory Board. With the updated Charter signed in October 2014, the Board will meet three times per year to provide advice and recommendations on:

- The programs, plans and policies of MEP;
- The soundness of MEP's plans and strategies; and
- Current performance in relation to MEP program plans.

The MEP Advisory Board consists of members broadly representing the interests and needs of the manufacturing sector. The MEP Advisory Board met twice in 2013 and performed its three chartered functions. In addition, individual Board members worked directly with the MEP staff and attended relevant meetings to collect information on MEP program status and planning activities.

This report highlights the Advisory Board observations, findings and recommendations. Detailed meeting minutes are available on the MEP website at: http://www.mep.nist.gov/about-mep/mep-advisory-board.htm.

Board Members in 2013

Dennis Dotson, Chair

Dennis Dotson is a third generation foundryman serving as Chairman of Dotson Iron Castings in Mankato, Minnesota. The company is in the top tier of foundry suppliers and has been acknowledged by the industry's society as the "Metalcaster of the Year" out of 2,000 North American facilities. Denny has been very active in the industry serving on various boards, past president of the Ductile Iron Society and is the current president of the American Foundry Society. He is also chairman of People Driven Performance, a startup company focused on internal communications. Dennis has a strong commitment to education and is a trustee emeritus of the Minnesota State Colleges and Universities, the governing board for the 35 post-secondary state institutions. He is a U.S. Navy veteran and a graduate of the University of Notre Dame (1967 BBA) and the University of Chicago (1968 MBA). He currently serves on the board of Enterprise Minnesota (a NIST MEP affiliate). The constant in his career has been the involvement in many new community, educational and business startups.

Vickie Wessel, Vice Chair

Vickie Wessel is the founder and President of Spirit Electronics, Inc. She has more than 30 years of experience in the electronics industry, including sales, marketing, procurement, operations, contracts, finance and quality systems management. Since its founding in 1979, Spirit has grown to support broad line electronic component distribution, supply chain solutions, and component value-added services. Her commitment to continuous improvement is evidenced by Spirit's ISO9002 and AS9000 certifications and her on-going participation in lean manufacturing and process improvement activities. Vickie's passion for improving the contracting environment for the benefit of small businesses throughout the nation has led to her active affiliation with the National Minority Supplier Development Council, the Grand Canyon Minority Supplier Development Council, the Aerospace Industries Association Supplier Management Council (SMC), the Arizona Minority Business Enterprise Center, and the Women's Business Enterprise National Council. In 2005, she received AIA's "Amelia Earhart Award", recognizing women who achieve excellence in the aerospace and defense industry.

Roy A. Church

Dr. Roy A. Church is President of Lorain County Community College (Elyria, Ohio). He has served thirty-six years as a leader in comprehensive community colleges and has led the transformation of Lorain County Community College as its president since 1987. Dr. Church's hallmark initiatives during his tenure include building collaborative private and public partnerships to support education, workforce and economic development. Among these accomplishments include: establishing a renowned University Partnership Program involving 12 universities delivering over 40 bachelor and graduate degrees; the only Edison Technology Incubator on a college campus in Ohio; a $14 million pre-seed fund for regional technology start-ups; a 46,000 square foot commercialization center for sensors and microsystems; and a 75,000 square foot Advanced Technology Center supporting advanced manufacturing containing the National Science Foundation Weld-Ed Center and rapid prototyping lab. Dr. Church co-chairs the Ohio Board of Regents Articulation and Transfer Advisory Council, Cooperative Education and Internship Advisory Committee and Complete College Ohio Task Force. He also served on the State Advisory Committee on Adult Career-Technical Programs and the Ohio Board of Regents Technology Transfer and Commercialization Task Force. Regionally, Dr. Church serves on the Northeast Ohio Council on Higher Education, NorTech Board of Directors, Manufacturing Advocacy and Growth Network (MAGNET) and Fund for our economic future.

Eileen Guarino

Eileen Guarino is currently President and COO of Greno Industries located in Scotia, New York. Ms. Guarino attended the University of South Carolina. Early in her career, Ms. Guarino was a buyer for a clothing company which represented apparel in various resort locations throughout SC, Florida and Georgia. There she developed a woman's clothing line that retailed in nine locations. Her responsibilities ranged from coordination of the annual buys to importing fabrics to be manufactured in the US. In 1988, Ms. Guarino relocated to upstate New York, where she lent her talents to her new career in the manufacturing parts business as what she calls "part of the Greno team". Greno Industries is a family owned business, and is a recognized minority women owned business in New York State. Ms. Guarino has worked to expand the company's clients to now include successful relationships in new markets throughout Europe and Asia, as well as leading the company's strategic planning growth efforts of its 60,000 sq. ft. manufacturing facility. As a result of her "Greno team" approach, she works to enhance the personal and professional growth of employees to be trained in Six Sigma and Lean Principles. One of her successes in her business career, of which she is most proud, was creating and implementing an in house high school MFG internship training program with local high school students. Ms. Guarino was the past President of the Tech Valley Global Business Network, and current Vice President of the Center of Executives Network of Manufacturing. She is also an active civic member in her chambers of commerce and the Women's Business Enterprise Network Council.

Edward W. (Ned) Hill

Edward W. (Ned) Hill is Dean, Professor, and Distinguished Scholar of Economic Development at Cleveland State University's Maxine Goodman Levin College of Urban Affairs. He is also a Nonresident Senior Fellow of the Metropolitan Policy Program at The Brookings Institution, a Nonresident Visiting Fellow of the Institute of Government at the University of California at Berkeley, and Adjunct Professor of Public Administration at South China University of Technology. He edited Economic Development Quarterly from 1994 to 2005. Hill is a member of the board of directors of MAGNET, the MEP affiliate organization in Northeast Ohio. Ohio Department of Development Director Christine Schmenk appointed Hill to Ohio's Manufacturing Task Force in 2011 and he has been a member of Ohio's Cooperative Education Advisory Council since 2009. Hill and his team completed a major study of advanced manufacturing for Pennsylvania's Industrial Resource Network Program in 2010. In 2011 and 2012 they advised JobsOhio, Ohio's economic development organization, and Northeast Ohio's economic development network on development strategy in 2011 and 2012. The Ohio Manufactures Association presented Hill with its Legacy Award in 2005.

Kellie Johnson

Kellie Johnson graduated from USC in 1982 with a B.A. in International Relations and joined the family business, ACE Clearwater Enterprises, in 1984 working in all areas from purchasing to production control. At that time the company had annual revenues of approximately 10 Million dollars, primarily in aerospace sheet metal forming and fabrication. Kellie took over operations of in 1985 and was promoted to President in 1989. Focusing on speed, quality and innovation, ACE Clearwater Enterprises has become a preferred supplier for most OEMs. Specializing in complex formed and welded assemblies the company has grown to nearly 200 employees with current (2013) projected revenue at 32 million. ACE Clearwater Enterprises has been certified to the new ISO 9001:2008/AS 9100C international quality standards, as well as Nadcap accreditation in NDT and Welding, making ACE Clearwater one of a handful of aerospace companies of its size working under these new standards.

Kellie Johnson continued

Kellie was Chairman of the Board of Directors for the CMTC (California Manufacturing Technology Consulting) in 1995 and served as a Board Member for 12 years. Currently, Kellie is on the Board of Directors for the National Association of Manufacturers, as well as the NAM Executive Committee. She served as the Chair of the NAM's Small and Medium Manufacturers group from 2010 through 2012. She is also a member of the Board of Trustees for the Manufacturing Institute. In 2006 Kellie was appointed by Secretary of Commerce Carlos Gutierrez to serve on the Manufacturing Council and was reappointed to serve on the Council under Secretary Locke with her term expiring in 2012, during which time she chaired the subcommittee on competitiveness. Kellie is also on the Board of Directors of the California Metals Coalition. She is also past Chair of the California Manufacturing & Technology Association and previously chaired the Manufacturing Working Group for the California Space Authority earning the CSA Spot Beam Award for manufacturing in 2009. Kellie was named the 2008 California Industry Person of The Year by the California Industrial and Technology Education Association. In the civic arena Kellie is involved the local school system speaking about careers in manufacturing where she encourages educators to promote manufacturing as a great career path. Her company aggressively promotes internship programs to expose young people to engineering and other manufacturing related careers by working closely with Community Colleges and Universities. In April of 2007 Kellie was selected by the Department of Defense to participate in the Joint Civilian Orientation Conference, (JCOC 73) where she visited Central Command in the Middle East.

Mark Rice

Mark Rice is President of the Maritime Applied Physics Corporation. After working for several engineering firms and U.S. Government laboratories, he formed Maritime Applied Physics Corporation (MAPC) in 1986. MAPC has both R&D and production work with offices in Maryland, Virginia and Maine. MAPC currently designs and manufactures electro-mechanical systems that range from submarine and surface ship components to commercial motion control systems. The company has recently completed two unmanned surface vessels for the U.S. Navy along with prototype distributed power and water systems for use by individual families in Afghanistan. MAPC has had several export contracts supplying ship components to foreign shipbuilders. Mark is a member of the local District Export Council for the Department of Commerce. He has a BA in Physics from the University of Maine and is a licensed Professional Engineer.

Rich Scott

Rich Scott was President of Quality Filters, Inc. Quality Filters manufactures a full line of products for the commercial, industrial and residential HVAC filtration industries. The company has served the air filter market since 1983, employing 100 people in Robertsdale, AL. Quality Filters has grown over its more than 26-year history from a small manufacturing firm with a limited line of pleated filters to a competitive presence offering a large array of HVAC, gas phase, products nationwide. Growing from 35,000 to 65,000 square feet to accommodate business growth, Mr. Scott recently expanded business through an agreement with Reckitt Benckiser, parent company of Lysol, to manufacture filters with the Lysol label. In 2008, Quality Filters worked with the Alabama Technology Network, a NIST MEP affiliate, to expand into a profitable niche market that presently accounts for about 15 percent of the company's sales and shows a potential for doubling. Under Mr. Scott's leadership, Quality Filters, Inc. was named as the 2011 Innovator Award recipient for the state of Alabama by the Southern Growth Policies Board.

Jeffrey Wilcox

Jeffrey J. Wilcox is the Vice President for Engineering at the Lockheed Martin Corporation, responsible for leading the development and execution of engineering strategy for the Lockheed Martin Engineering Enterprise and its 60,000 engineers, scientists, and technologists. Throughout his career, Mr. Wilcox has led several critical initiatives for the Lockheed Martin Corporation, including Engineering for Affordability, the Systems and Software Initiative, the Advanced Manufacturing Initiative, and the Energy Solutions Center launch. Prior to joining Lockheed Martin, Mr. Wilcox served as Senior Vice President at Science Applications International Corporation (SAIC) in McLean, Virginia. Mr. Wilcox graduated from Drexel University with a master's degree in Electrical Engineering and Case Western Reserve University, Cleveland, Ohio with a degree in Biomedical Engineering. He serves on the Drexel University Leadership Council, the Stevens Institute of Technology School of Systems and Enterprises Advisory Board, the Aerospace Industries Association (AIA) Technical Operations Council, the MIT Open CourseWare Next Decade Alliance Advisory Council, and the US Manufacturing Competitiveness Initiative (USMCI) Steering Committee. Mr. Wilcox is an American Institute of Aeronautics and Astronautics (AIAA) Associate Fellow and a Senior Member of the Institute of Electrical and Electronics Engineers (IEEE).

Ed Wolbert

Ed Wolbert is the president of Transco Products Inc., a leading U.S. medium-sized manufacturer and contractor dedicated to nuclear power. Mr. Wolbert has been in the nuclear power industry for over 30 years, has been with Transco for the last 28 years, and has served as its president for the last 16 years. Mr. Wolbert oversees the daily strategic direction and tactical operations of the company, including direct guidance of its foreign activities. Mr. Wolbert is a member of the American Nuclear Society, and is also a member of ASTM (serving on the C16 committee). Mr. Wolbert continues in his service on the governing board of the Illinois Manufacturing Extension Center, the Illinois affiliate of the NIST MEP Program. Mr. Wolbert continues to serve on the Department of Commerce's Civil Nuclear Trade Advisory Committee (CINTAC), after previously been both the committee's vice-chairman and chairman, and has been a vocal advocate and champion for small/medium size enterprises in the nuclear power market.

Advisory Board Activities in 2013

The Advisory Board conducted two meetings in 2013. The June 2013 meeting was held in conjunction with a MEP regional meeting in Denver, Co. The second meeting was held in September 2013 in Gaithersburg, Maryland. During the June meeting, the Advisory Board received a charge from the NIST Director, Dr. Patrick Gallagher, to provide input and guidance on several major programmatic issues. These included:

- **Providing recommendations on the MEP cost share requirement;**
- **Providing guidance on the development of the MEP strategic planning process;**
- **Reviewing the recommendations outlined in the National Academy of Sciences report entitled, "21st Century Manufacturing: The Role of the Manufacturing Extension Partnership Program of NIST";**
- **Commenting on the NIST 3--Year Programmatic Plan; and**
- **Providing input on job requirements and position description for the hiring of a new MEP Program Director.**

In order to accomplish the charge to the Board, two Subcommittees were formed. One committee focused on the cost share recommendations and a second was formed to address strategic planning. All recommendations and guidance provided to NIST MEP reflected the input and views of the entire Board.

MEP Cost Share

From June 2013 to September 2013, the Board focused on understanding the complexities of the current MEP cost share requirement as well as reviewing and analyzing data and information to develop a recommendation. Through the review, the Board considered a vast amount of input and feedback, including: 1) the GAO report entitled, *"Factors for Evaluating the Cost Share of Manufacturing Extension Partnership Program to Assist Small and Medium-Sized Manufacturers"* *http://www.gao.gov/new.items/d11437r.pdf*; 2) input from a 9 center survey; 3) responses from a general question posted on the MEP website; 4) results from a survey conducted by the American Small Manufacturers Coalition (ASMC); and 5) MEP staff research of Board questions that were not answerable through any of the resources above (such as those regarding center performance).

The Board found that cost share is a positive aspect of the program and it ensures that beneficiaries of the program participate. However, the current cost share requirement impedes the program's ability to: (a) serve smaller, emerging, and rural clients; (b) develop new innovative services to respond to the changing needs of small and mid-sized manufacturers; and (c) serve as a technology transfer and acceleration mechanism. In general, changing the cost share requirements would have numerous beneficial impacts, including more clients served, available cost share for other program investments, etc.

There were a number of other elements of cost share that the board recognized. These include:

- The current cost-share structure is 15 years old and is based on a funding formula that is 23 years old.
- The impact of changing the cost share on the financial size of the program is not possible to precisely determine, however there is no evidence that centers will be less motivated to secure cash resources to fulfill the mission.
- There is broad evidence that state contributions are not driven by cost share requirements but rather by state priorities, economic conditions, and center performance.
- There is evidence that reduced cost share requirements would result in centers serving more clients and benefit from reduced burden of managing in-kind cost share.

Based on their thorough review and analysis, the Board finalized their recommendation on MEP cost share during the September 27th meeting. The following recommendation was officially transmitted to the NIST Director on October 18, 2013:

"The objective of the program is to enhance productivity and technological performance in United States manufacturing. The cost share policy supports the mission of the program and its statutory requirements.

- *In order to optimize the federal investment and provide for the long-term sustainability of the program the National Advisory Board recommends:*
  - *Readjusting the cost share requirement to 1:1.*
  - *Demonstrating an appropriate and balanced industry investment.*
  - *Allowing local flexibility in providing in-kind cost share (not to exceed one-half of the Recipient's annual cost share) with:*
    - *Clearly defined, well understood, and achievable criteria.*
    - *Direct and measurable impacts consistent with program performance and evaluation.*
  - *Maximizing program performance through a balanced application of evaluation mechanisms that appropriately include but are not limited to cost share (e.g. center performance metrics.)*
  - *Implementing the cost share recommendations in conjunction with an inclusive strategic planning process and a comprehensive review of system and center performance."*

All materials related to the Board's cost share review, including the final transmittal letter to the NIST Director is available on the Board's webpage at: http://www.nist.gov/mep/advisory-board.cfm.

MEP Strategic Plan

Recognizing that a new NIST MEP strategic plan is necessary to respond to the current challenges of the manufacturing sector and address the priorities of the Administration and other stakeholders the Board was requested to provide guidance to MEP on developing a system-wide strategic planning process, ensure engagement of all key stakeholders, and participate in the planning process itself. The Board began this activity in September 2013 and provided input into a few key areas including suggestions on how to clarify the scope of the planning efforts to ensure it is an MEP focused-strategy and that it focuses on how the entire MEP system can impact all SMEs. The Board also provided guidance to

ensure all critical inputs are considered when developing the new strategy. The Board felt it was important to include:

- Views of manufacturers - both clients and non-clients
- Direct Center/System engagement
- State-level perspectives (National Governor's Association, State Science and Technology Institute, others)
- Federal Agencies (partners, sponsors, etc.)
- Policy Makers (Congress, White House, Department of Commerce, National Institute of Standards and Technology)

During the September meeting, the Board also reviewed the high-level timeline developed by the program: gathering input from external stakeholders and the MEP system through January 2014, plan development in the February – May 2014, Board review of the plan during the May 2014 meeting.

National Academy of Sciences report entitled, "21st Century Manufacturing: The Role of the Manufacturing Extension Partnership Program of NIST"

As part of the strategic planning efforts the MEP Advisory Board received a briefing from Dr. Charles Wessner from the National Academies of Sciences (NAS) during their September 2013 meeting. Dr. Wessner provided an overview of the recently released report, *"21st Century Manufacturing: The Role of the Manufacturing Extension Partnership Program of the National Institute of Standards and Technology, a report by the National Academy of Sciences."* The 476 page report studied the MEP program in great detail including its history, reporting, and structure of the 60 different MEP centers. The Report provided eight general recommendations that encompassed over 30 specific recommendations

Below are the eight recommendations outlined in the report.

1) Focus more on driving the overall improvement of MEP centers rather than focusing on the outcome of individual centers.

2) Use resources to leverage maximum beneficial outcomes rather than reaching the maximum number of manufacturers.

3) Continue to encourage lean manufacturing.

4) Continue the program's Next Generation Strategy but address challenges inherent in its transition.

5) Significantly improve its collection and analysis of performance data.

6) Federal funding for the MEP program should be at a level commensurate with its mission and take into account relevant international benchmarks.

7) Be more flexible in the management and funding of MEP centers.

8) Take into account lessons learned from U.S. and international best practice.

In consultation with the Board, NIST MEP has begun to work with and across the MEP system to address many of these recommendations. These include but are not limited to:

- Development of a new strategic plan for the MEP system that will set high level goals, objectives, and strategies that answer the question "what is success for the MEP system and what is success for an MEP center" while promoting local flexibility and the principle that each MEP center can focus on what its local market needs the most.

- Revision of the Center Operations Reporting and Evaluation ("CORE") performance and evaluation system to reflect the new strategic plan, including new qualitative weight to reflect the strengthening of the MEP system and regional and local manufacturing eco-systems.

- Promotion of the MEP system as a learning organization by convening regular system meetings, reconstituting the MEP national conference, and developing peer-to-peer working groups around key topics of interest.

- Continue to stress the importance of lean manufacturing and more fully incorporate work in lean manufacturing in CORE and in the fabric of new programs and services.

- Build upon initial efforts to create "data as a service" offerings from the national program office to MEP centers so that data can inform strategic choices of centers rather than be seen solely as a performance task.

- Continue efforts to refresh and re-align federal, state, center, and industry priorities through a systematic center re-competition that seeks to reset center funding, reduce reporting burden, and increase operational efficiencies.

- Formalize a contract evaluation process and apply it to ongoing contracts and apply lessons learned to contracts moving forward.

The Board fully supports the efforts begun by NIST MEP and recognizes the steps taken to more fully engage the MEP centers in these efforts. The Board will continue to monitor progress on implementing these recommendations.

NIST MEP Advisory Board Comments on the NIST Three-Year Programmatic Plan, FY2014 – 2016

The America COMPETES Act (P.L. 110-69), which formally established the Manufacturing Extension Partnership Advisory Board, also charges the MEP Board to "transmit an annual report to the Secretary for transmittal to Congress within 30 days after the submission to Congress of the President's annual budget request each year. Such report shall address the status of the program established pursuant to this section and comment on the relevant sections of the programmatic planning document and updates thereto transmitted to Congress by the Director under subsections (c) and (d) of section 23."

The NIST Three-Year Programmatic Plan, FY2014-2016 states as the organization's mission: "To promote U.S. Innovation and industrial competitiveness by advancing measurement science, standards and technology in ways that enhance economic security and improve the quality of life."

One of NIST's four goals is to "Fortify U.S. advanced manufacturing capabilities. The Nation's long-term competitiveness relies upon its global leadership in advanced manufacturing capabilities. NIST will develop and deploy unique tools to support U.S. advanced manufacturing through programs including the Hollings Manufacturing Extension Partnership, the Advanced Manufacturing Technology Consortia Program, and the National Network for Manufacturing Innovation."

MEP's enabling statute (U.S.C. Title 15 Chapter 7, Sec. 278k). – "Regional Centers for the Transfer of Manufacturing Technology" states that "The objective of the Centers is to enhance productivity and technological performance in U.S. Manufacturing" which will be accomplished through six activities including "The transfer of manufacturing technology and techniques developed at NIST to Centers, and through them, to manufacturing companies in the United States."

Technology Forecasting

The MEP Advisory Board recognizes the importance of understanding emerging technology trends – forecasting 5-10 years into the future – and their impact on the needs of SMEs. NIST's strong scientific research capabilities and connections to industry can provide important insights to the MEP program, for example in the priority area of Cybersecurity.

The MEP Advisory Board commends NIST's focus on manufacturing and applauds the role of its laboratories in advancing measurement science, standards and technology, and encourages examination of ways MEP can take advantage of NIST's advanced research to help SMEs establish competitive capabilities.

Board to Board Collaboration

Over the past two years NIST's Visiting Committee on Advanced Technology (VCAT) has recognized the central role that small and medium-sized manufacturers play in the nation's manufacturing ecosystem, and has supported closer collaboration with the MEP Advisory Board. In February 2013 a panel on MEP was presented to the VCAT and in June 2013 the Chair of the VCAT briefed the MEP Advisory Board on VCAT activities; a briefing of the VCAT by the MEP Chair is scheduled for June 2014.

The MEP Advisory Board strongly encourages continued engagement between the two advisory boards.

Role of SMEs in Manufacturing Innovation Institute Program

The Administration has proposed establishment of a National Network of Manufacturing Innovation institutes to provide the R&D infrastructure needed to support a robust advanced manufacturing sector. NIST's Advanced Manufacturing National Program Office (ANMPO) is responsible for coordinating the institute networks. MEP supports the AMNPO in policy coordination and project reviews. As envisioned in the National Network for Manufacturing Innovation: A Preliminary Design Report of January 2013 prepared by the AMNPO, outreach to SMEs is an integral component of a successful manufacturing innovation institute, and the proposed NNMI legislation (The President's Proposed Budget of the United States Government, Fiscal Year 2013) specifically requires that MEP be included in program planning.

The MEP Advisory Board endorses the efforts of the NIST AMNPO to ensure that SMEs are full partners in institute planning and implementation.

Job Requirements for the Hiring of a new MEP Program Director

The MEP Acting Director has stated the goal of hiring a new MEP Program Director once the strategic plan is developed. The program will provide an update to the Board in May 2014 and begin actively soliciting the Board's input related to the appropriate skills and attributes needed for the NIST MEP Director.

Review of Past Board Recommendations

At the June 2013 meeting, the Board asked for an update on the following recommendations:

1. Recommendation that NIST MEP initiate a personnel exchange program with the MEP Centers so that Federal staff and MEP Center staff can deepen their understanding of their respective roles in this public private partnership and provide more effective services to U.S. manufacturers.

2. Recommendation that MEP strategic efforts in the area of workforce development be expanded by looking for collaborative efforts with other Federal Agencies that address specific workforce gaps of interest to SMEs.

3. Recommendation that MEP develop specific metrics for the Innovation Engineering program and that MEP continue its effort to more directly brand the Innovation Engineering program as an MEP activity while considering options to broaden the range of service providers under this program.

During the September 2013 Board meeting, NIST MEP provided and update on each of these recommendations.

Employee Exchange Program

A personnel exchange program could be used for the professional development of staff at both the MEP centers and NIST MEP and offer specific benefits for the individual candidates and both organizations.

The benefits to NIST MEP include:

- A broader understanding of the complexities of operating a MEP center
- Stronger connections to a Center's partner organizations and better understanding of center relationships with key stakeholders including state government leaders
- Opportunities to better explore and understand the needs, challenges, and growth opportunities for U.S. manufacturers

The benefits for the MEP centers include:

- An understanding of the role of NIST MEP in maintaining a networked system of centers
- Stronger connections with NIST MEP and its various divisions, teams, and staff
- A greater appreciation for the complexities of operating within the federal government environment including MEP relationships with NIST, DOC, other federal agencies, the White House, and Congress

NIST MEP discussed plans for sharing the concept with a group of centers for input and developing criteria for identifying candidates both within NIST MEP and the individual centers. With Center input, details are being refined with plans to pilot the program in the second quarter of 2014.

Workforce Development Activities

MEP has been working proactively on several levels and through leveraged partnerships to accelerate the up-skilling and employment of the manufacturing workforce. Specifically, MEP works at three broad levels to encourage America's manufacturers to enhance worker skills and to approach workforce issues more strategically:

- **Direct Client Engagements** - MEP centers work directly with small manufacturers to help them with their competitiveness issues, including addressing workforce strategy and training needs.
- **State and Local Level** - MEP centers are engaged with educational institutions, workforce boards, and other stakeholders and service providers to strengthen the manufacturing ecosystem that will support and address expressed manufacturers' needs.
- **National Level** - NIST MEP collaborates with trade associations, other federal agencies and other manufacturing allies to support and promote the growth of manufacturing.

The MEP program provided examples of program activities and initiatives that support the needs of the manufacturing workforce in each of these areas. The program recognizes that workforce development is a key challenge faced by a number of manufacturers. It also represents a major initiative of the

Administration and MEP is supporting efforts across the government to leverage resources and partnerships to respond to the challenge.

Development of Innovation Metrics

Innovation and growth continue to be crucial areas small manufacturers need to consider to remain competitive. NIST MEP has made significant investments over the past six years to position the MEP system to provide growth related services. In 2013, the NIST MEP program conducted a systematic evaluation of two growth services – the National Innovation Marketplace (NIM) and Innovation Engineering to ensure NIST MEP is making the best use of program development resources to support the MEP centers and offer the services more needed by U.S. manufacturers.

The National Innovation Marketplace (NIM)

The NIM's primary objective is to connect manufacturers to technology and business opportunities that result in new markets and new products and is intended to serve as a "bricks" (the human resources of the NIST MEP national network) and "clicks" (online web-based clearinghouse) platform of tools. The NIM operates as a web-based exchange populated with technologies available for capabilities or expertise being sought by businesses, and information about manufacturer capabilities. The NIM is intended to provide the ability to establish an open exchange to:

BUY and MARKET Innovations
SELL and REQUEST Solutions
PUBLISH and HIRE Expertise

While the review of the NIM revealed that a general disconnect exists between the original intent of the tool and how it was being used, NIST MEP and the Board recognize the value of a Business-to-Business (B2B) tool to help connect companies and share opportunities. NIST MEP is no longer investing in the NIM but will use lessons learned as the program moves forward on identifying other options for B2B services.

Innovation Engineering

Innovation Engineering was founded to enable the NIST MEP system to work with small and medium-sized manufacturers to deploy a growth strategy focused on new markets, new products and new technologies. In short "Innovation Engineering transforms innovation from a random art into a reliable scientific system for profitable growth." Innovation Engineering provides a web-based support platform to access tools, manage projects and interactions.

Innovation Engineering and the work with NIST MEP to focus the system on growth for manufacturers has worked to increase awareness, inform and educate and provide some of the tools needed to generate ideas and concepts for companies looking to grow. Since it has been a stretch for the system,

the adoption rate has been a slow one for Innovation Engineering. That said, it has generated some system adoption and further has motivated others to look at their approach to engaging clients in growth related engagements and define their approach to the market independent of Innovation Engineering. With the work and saturation of the market including centers and companies, NIST MEP is at a point where the focus should be turned to measuring outcomes, sharing successes and best practices in a collaborative approach to inform decisions versus directing solutions.

NIST MEP Budget

In September 2013 the National Academies of Science presented to the Advisory Board the results of a comprehensive 476 page report on U.S. manufacturing, the role of the MEP program, and competitive efforts in US trading partners such as Germany, Canada, the United Kingdom, France, and Taiwan. *21st Century Manufacturing: The Role of the Manufacturing Extension Partnership Program* identified as its first "Core Recommendation":

"Funding for MEP should be commensurate with the importance of manufacturing to the growth of the economy and the program's proven ability to contribute to improved firm performance and adapt to the changing needs of the manufacturing sector. The current level of funding is not adequate to maintain the program's focus on small firms, build new services around the Next Generation Strategy, and provide the resources required to drive the improvements recommended by this assessment." (p.5)

In January 2014, the Congress approved FY2014 appropriations for the Federal government, which included $128 million for the MEP program, a 6.6% increase over FY2013. The Administration's FY2015 Budget request to the Congress proposes $141 million for the MEP program, an increase of 10%. This increased funding will be provided to directly support work with manufacturers. The Advisory Board greatly appreciates the confidence of the Administration and Congress to provide appropriate funding for the MEP program.