

Welcome to the 2020 Industry Resilience Virtual Convening

- All attendees are in listen only mode.
- Attendees can submit questions to our presenters anytime during the webinar by using the questions box you will find in your gotowebinar interface.
- The webinar is being recorded and recordings for all the sessions will be emailed out to all registrants on Friday, May 8th

2020

OEA Industry Resilience Learning
Community Exchange:
Virtual Convening
Webinar 3



New Partners to Strengthen the DMCSP

May 7, 2020

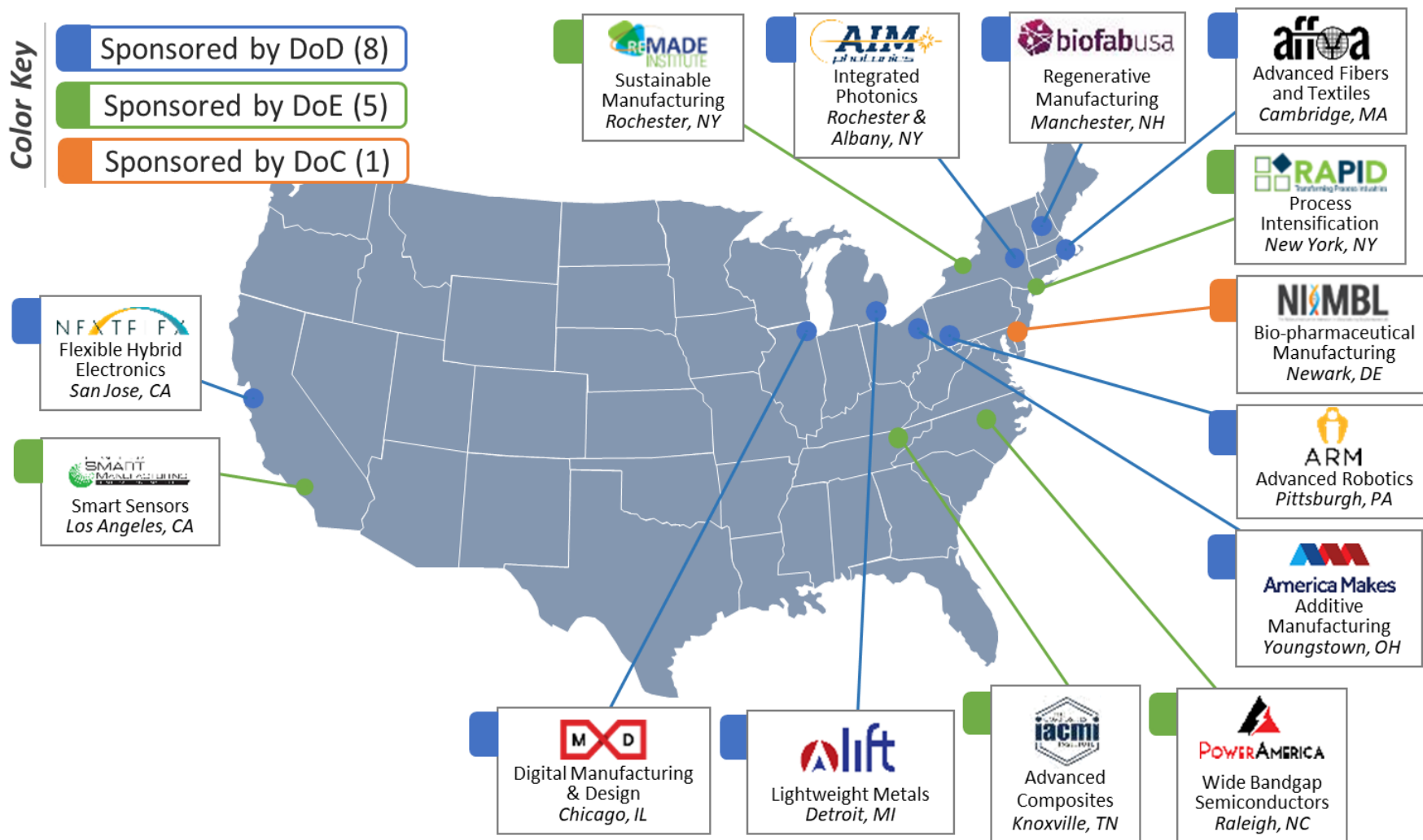


Michael Britt-Crane

- Education & Workforce Development Lead
- DoD Manufacturing Technology Program Office
- 571-372-7419 (office)
- 301-244-9043 (cell)
- michael.d.britt-crane.civ@mail.mil



Innovation Institutes



Problem

Revitalizing domestic manufacturing is essential to national security and to a robust recovery from the COVID-19 crisis. Before the crisis, manufacturing growth was constrained by a workforce skills gap, with 2.4M unfilled jobs projected by 2028.

- Technology Transformation (Industry 4.0)
 - Industry 4.0 skill needs \neq skills of the workforce pool
 - Labor market supply not meeting employer demand
 - Generational shift in workforce interests
- Education System Failing Manufacturing Sector
 - Curriculum lagging rapid technology advances
 - Hybridization of skills needs across disciplines
 - Insufficient connectivity with industry
 - Industry 4.0 education inadequately resourced
- Workforce Development System Not Responsive



IMPACTS
FELT AT
LOCAL
LEVEL

Strategies

- Develop talent & technology concurrently
 - Use new learning tools
learning venues
learning pathways
 - Use of non-traditional learning
 - Enhance existing system: reform CTE
 - Influence workforce development system investment priorities
 - Influence state and local economic development investment priorities
- DISRUPTIVE INNOVATIONS
- apply these to...
-
- The diagram illustrates a set of strategies for workforce development. A blue bracket groups the first three items: 'Use new learning tools', 'learning venues', and 'learning pathways'. A red bracket groups the next two items: 'Use of non-traditional learning' and 'Enhance existing system: reform CTE'. A red arrow points from the text 'apply these to...' to the red bracket. The text 'DISRUPTIVE INNOVATIONS' is positioned to the right of the blue bracket.

Implementation

1. DoD will lead a Collective Impact enterprise, integrating efforts across a national network of MIIs and partners
 - Develop and apply foundational workforce development elements, cross cutting capabilities, and novel tactics
 - Develop a co-designed enhanced evaluation framework
 - Model regional solutions guided by real-time data
2. Lead an expanded national network of regional leaders
3. Expand a DoD-lead coalition of Federal agencies
 - Currently partnering with DoE, DoC NIST, ED, and NSF
 - Initial engagements with DoC EDA, and DoL

Model a Regional Intervention Approach

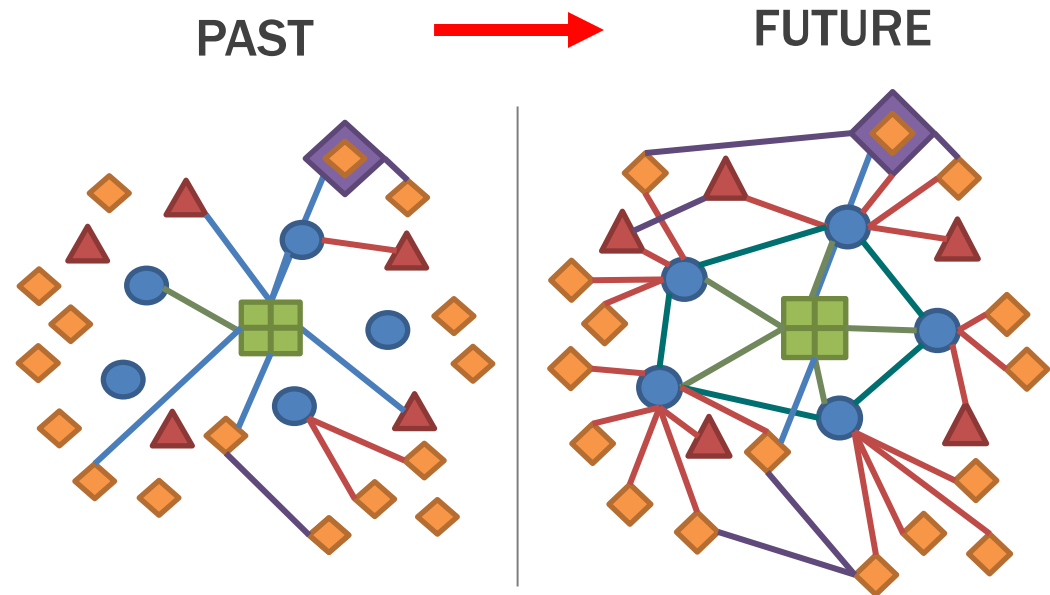
Goals:

- Drive persistent systems change
- Lead and coordinate nationally
- Employ a proven economic development playbook aligned to local talent demand

Discrete Actions to Drive Systemic Impacts:

- Gather, validate, and analyze localized competency demand data
- Link technology creators with workforce training such that workforce skills lead rather than lag tech development
- Link and leverage workforce investment and economic development resources to create education & employment pathways

REGIONAL NETWORK OPERATIONAL MODEL



- Institute or Institute Partnership



- Reg'l. Leaders/Influencers



- Reg'l. Community College/VoTech



- Reg'l. Large Manufacturer



- Reg'l. Small/Midsized Manufacturer

Sponsored by:

U.S. Department of Defense
U.S. Department of Education
National Science Foundation

Supported by:

U.S. Department of Commerce
U.S. Department of Energy



Bottom Line

Criticality

The DoD needs a resilient industrial base and a DoD workforce with advanced manufacturing skills to be globally competitive, enable technology modernization, and rapidly field weapons systems for a ready and lethal force.

Impact

Without an appropriately skilled and capable workforce the defense industrial base will be at risk; national defense and economic security will suffer.

Problem

In the U.S. manufacturing sector, growth has been curtailed by a scarcity of skilled workers with 53% of open positions unfilled annually due to shortage of talent. The COVID-19 crisis is expected to exacerbate this problem dramatically.

Solution

Lead a multifaceted national manufacturing workforce initiative to accelerate the development of a highly skilled talent pipeline for the manufacturing industrial base and DoD workforce. Focus on execution at the local level.

DoD and the Manufacturing Innovation Institutes are:

- **Actively engaged with a robust coalition of partners** across industry, academia, education and training, federal agencies, as well as state and local governments
- **Developing technology and talent concurrently** with novel education technology, venues, pathways, and pedagogies
- **Leading an extended collaboration network** of economic development efforts across 41 states and counting

These assets and capabilities position DoD to lead a national effort to modernize the manufacturing industrial base workforce and support a rapid and robust recovery from the COVID-19 Crisis.



Jacqui Mieksztyn

- Talent Strategist
- LIFT
- (586) 524-4298
- Jacqui.Mieksztyn@gmail.com



Where Manufacturing Technology and Talent Matter



Michele Economou Ureste

- Executive Director
- Workforce Intelligence Network of Southeast Michigan
- Michele.Ureste@winintelligence.org





Lizabeth Stuck

- Director, MxD Learn
- MxD (Digital Manf Institute)
- Lizabeth.Stuck@mxdusa.org



Manufacturing x Digital



David Boulay, PhD.

- President
- IMEC
- 309-677-3766 (office)
- 309-339-4468 (cell)
- dboulay@imec.org
- www.imec.org
- <https://www.nist.gov/mep>





Jeff Edwards

- Senior Advisor
- Utah Advanced Materials & Manufacturing Initiative UAMMI
- 801-455-0896 (cell)
- jedwards@uammi.org





Joannie Harmon Heath

- Workforce Director
- IACMI/CCS Corp.
- 856-314-5251 cell
- jharmon@iacmi.org
- www.iacmi.org





Mary Ann Pacelli

- Program Manager, Workforce Acting Div. Chief, Competitions
- NIST Manufacturing Extension Partnership (MEP)
- 301-975-4850 (office)
- 202-660-2980 (cell)
- mary.pacelli@nist.gov



MEP
**National
Network™**

*The Go-To Experts for Advancing
U.S. Manufacturing*



Jacqui Mieksztyn

- Talent Strategist
- LIFT
- (586) 524-4298
- Jacqui.Mieksztyn@gmail.com



Where Manufacturing Technology and Talent Matter

National Manufacturing Innovation Institutes

The 14 institutes are uniquely positioned to develop and lead strategies to solve manufacturers' workforce challenges as key drivers of both technology innovation and education and workforce development for the advanced manufacturing industry.

The institutes bring:

- Expertise in new and emerging technologies that will require new skills and competencies
- Established connections to federal, state, and local government, industry, education, workforce development, and other key stakeholders
- Credibility as a voice of the industrial commons to attract funding from multiple sources

LIFT: National and Regional Asset

LIFT brings a multitude of assets that can be leveraged to develop new and innovative strategies and partnerships to address challenges faced by the advanced manufacturing industry, including:

- Technology expertise on smarter manufacturing processes, materials, and systems, including the integration of digital modeling and twinning into modern manufacturing environments.
- Partnerships with industry, federal, state, local education and workforce entities, and philanthropies.
- A portfolio of 40+ replicable, scalable, and sustainable education and workforce initiatives, developed by leveraging federal, state, local, and philanthropic funding, including:



LIFT in Southeast Michigan

LIFT will lead a regional collaborative in Southeast Michigan, with a focus on Flint, that will reimagine career and technical education to better prepare a skilled advanced manufacturing talent pipeline and will be well-positioned to support the region's defense industrial base through DMCSP.



Partners will develop data-driven strategies to:

- Better align industry demand and educational pathways in the regional economies;
- Create new and innovative career and technical education models, tools, venues, and pedagogy;
- Enhance curriculum to incorporate advances in institute-focused technologies; and
- Drive solutions to address the CTE instructor shortage crisis.



Michele Economou Ureste

- Executive Director
- Workforce Intelligence Network of Southeast Michigan
- Michele.Ureste@winintelligence.org



WIN & OEA Accomplishments

- ❖ The Workforce Intelligence Network (WIN) is a Consortium of Nine Colleges and Six Workforce Development Boards
- ❖ WIN Operating Pillars: Data, Employer Collaboratives, and Regional Workforce Solutions
- ❖ OEA \$7.7M Grant 2015- 2019 Produced Over 18 Studies: Mapping CAV and Cybersecurity Ecosystems, Skills Gap, SWOT: Key Geographies in Nation. Partners: CAR, MMTC, MEDC, Merit Network, Next Energy, MDOT, Automation Alley
- ❖ WIN/LIFT Quarterly Labor Market Reports/Jobseeker Reports/Annual Reports for Multi-State Region
- ❖ Excels at Grant Management, Compliance, Monitoring, and Reporting
- ❖ Updating and *Integrating* OEA Studies on Cybersecurity Skills Gap Analysis and the Connected Automated Vehicle Social Network Analysis

Employer Collaboratives & Regional Workforce Solutions

- ❖ Michigan Alliance for Greater Mobility Advancement (Five OEMs, Five Tier 1's, Four Universities, Planet M, ACM, MichAUTO, Center for Automotive Research (CAR))
- ❖ Co-Convening Employer Collaborative with State of Michigan Applying Supply Chain Management Techniques to Talent
- ❖ Experience IT/WTIA Apprenti
- ❖ Ralph Wilson Foundation \$1.5M grant, Prescreened Candidates and \$15K training reimbursement funds

Employer Collaboratives & Regional Workforce Solutions

- ❖ USDOL Apprenticeship Grants (\$4M AAI & \$4M Closing the Skills Gap)
- ❖ Recognized in 2020 as a Top 15 AAI Grantee in Nation
- ❖ Strength of Network to Exceed Outcomes, Employer Engagement & Candidate Recruitment
- ❖ National Pilot Underway for “Apprenticeship Skills Builder,” an Open Source Repository for Occupational Frameworks
- ❖ Leveraged in Transformative Tech Occupations in Transportation
- ❖ Participates with AMCC
- ❖ DMCSP: Leverage and Expand Labor Intelligence and Talent Development Programs and Resources

Question to Team 1



**Jacqui
Mieksztyn**
LIFT



**Michele
Economou Ureste**
Workforce Intelligence
Network of Southeast
Michigan



Lizabeth Stuck

- Director, MxD Learn
- MxD (Digital Manf Institute)
- Lizabeth.Stuck@mxdusa.org



Manufacturing x Digital

In order to reach manufacturers, we need to think differently

MxD serves as a neutral convener

bringing together subject matter experts in digital manufacturing and cybersecurity for manufacturing to drive solution development

Collaboration amongst a community creates solutions

Manufacturing Innovation Institutes must work closely with regional partners with shared missions – leveraging each other's expertise – to ensure programs address demand



David Boulay, PhD.

- President
- IMEC
- 309-677-3766 (office)
- 309-339-4468 (cell)
- dboulay@imec.org
- www.imec.org
- <https://www.nist.gov/mep>



U.S. Commerce MEP

- Mission: enhance the productivity and technological performance of U.S. manufacturing.
 - over 1,400 trusted advisors and experts at approximately 375 MEP service locations,
 - equip small and medium-sized manufacturers with the resources needed to grow and thrive.
- “P” for partnership
- Measuring impacts



**MEP • MANUFACTURING
EXTENSION PARTNERSHIP®**

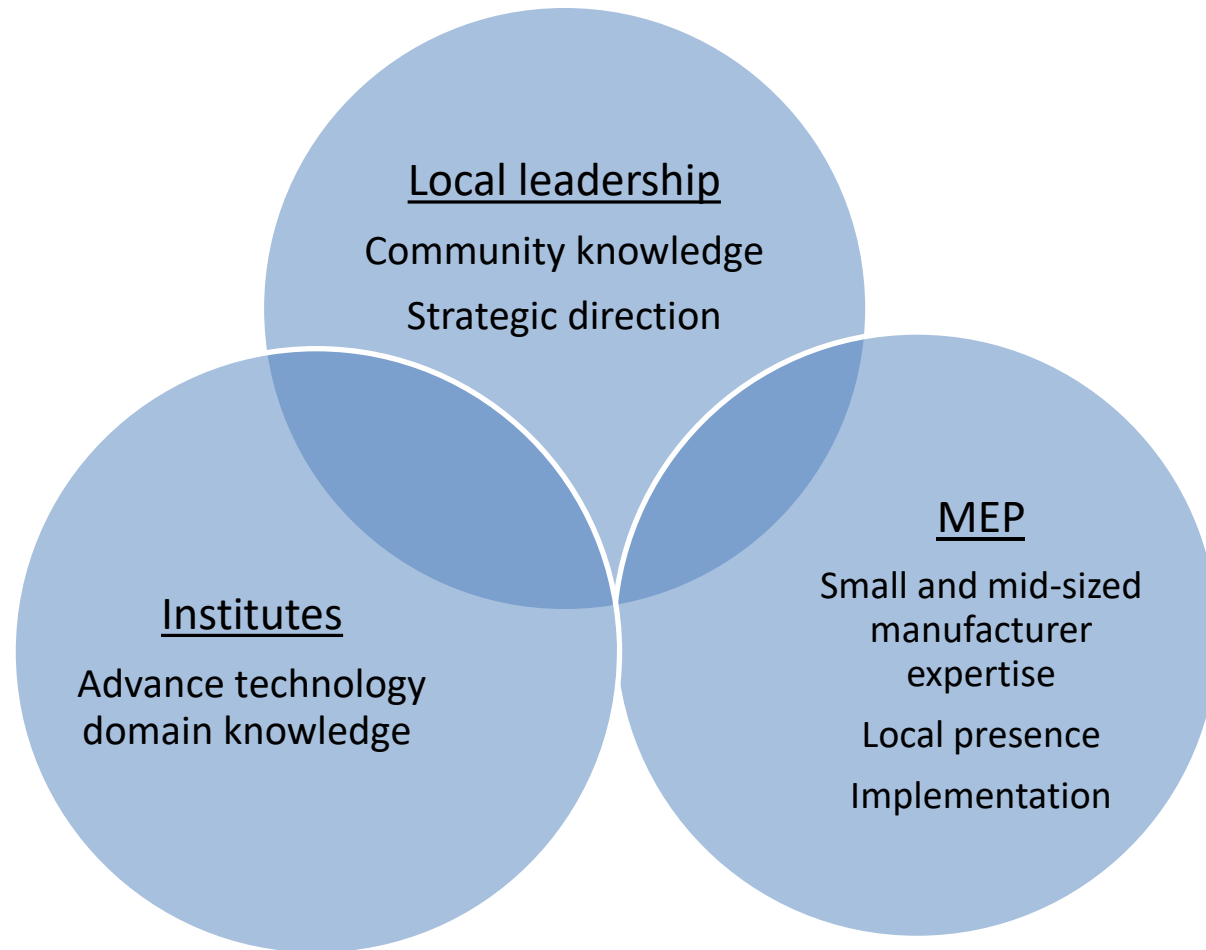
On the ground experience

- St. Louis RAMP
 - Illinois and Missouri St Louis region
- Illinois Defense Network
 - statewide and regional
- MEP body of work
 - Resilience: Growth and diversify
 - Risk: Cybersecurity
 - Workforce: Upskilling. Manufacturing day
 - Supply chain: scouting and matchmaking

MEP's with the Manufacturing USA Institutes

- Embedded MEP staff at Institutes.
- IMEC and Purdue MEP at MxD.
 - Digital assessments; train-the trainer
 - Over half MEP centers were trained
 - Smart Factory assessment
 - Events

Partners for Industry Resiliency



Question for Team 2



**Lizabeth
Stuck**

MxD



**David
Boulay, PhD.**

IMEC



Jeff Edwards

- Senior Advisor
- Utah Advanced Materials & Manufacturing Initiative UAMMI
- 801-455-0896 (cell)
- jedwards@uammi.org





Joannie Harmon Heath

- Workforce Director
- IACMI/CCS Corp.
- 856-314-5251 cell
- jharmon@iacmi.org
- www.iacmi.org



AMCC & UAMMI Partnership

- UAMMI created through IMCP in 2016
- Focus on advanced materials & mfg
- AMCC valuable network for problem solving and collaboration
- AMCC strengthens DOD mfg resiliency
 - Composite Materials critical for DOD
 - Workforce sustainability highest priority
- DMCSP ideas already being implemented

UAMMI support for DOD

- OEA Grantee – 2016-18
 - CONNEX Supply Chain Tool focused on Utah advanced materials industry
 - Now connected to national marketplace
- Strong workforce development programs
 - Great teaching curriculum at Tech Colleges
 - Aerospace Pathways Internship Program
 - Industry-led Masters Degree in Composites

Regional/National Collaboration

- IACMI partnership with UAMMI
 - National thought leader in composite materials supports regional programs
 - MOU in 2017
 - Examples IACMI/UAMMI collaboration
 - 3D Carbon printing for legacy aircraft parts
 - Low cost carbon fiber from coal
 - MEEP workforce development program

Advanced Composites Career Pathways

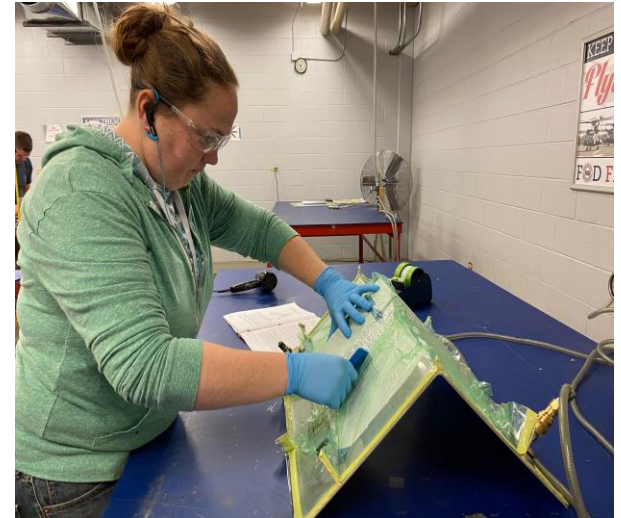
Sponsored by Office of Naval Research (ONR)
Manufacturing Engineering Education Program (MEEP)



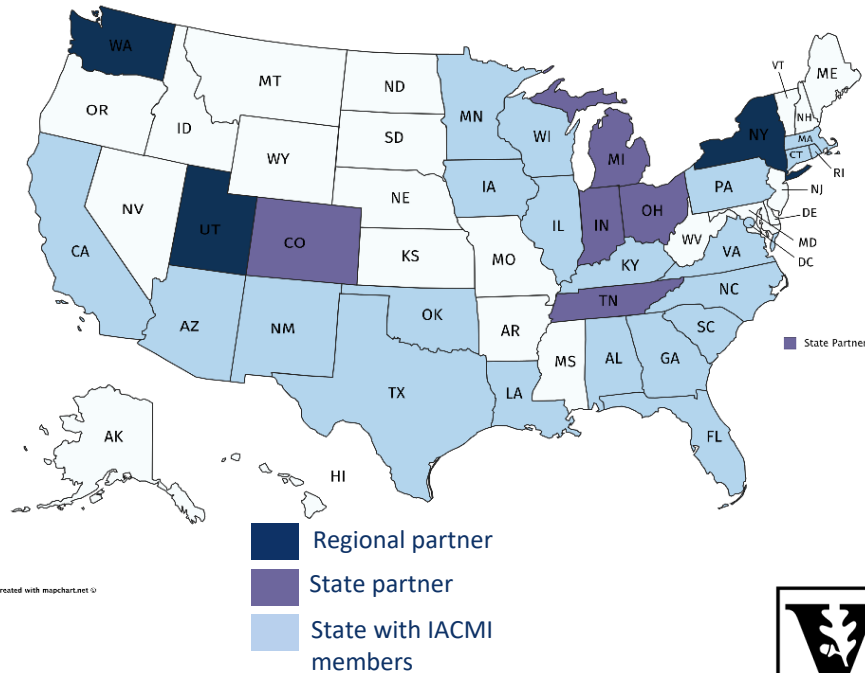
- Aligned to regions within DOD Supply chain
 - AL, CO, SC, OH, NY
- Regional programs build national resiliency
 - Contextualized for local economic impact
 - Increase talent pipeline resiliency

Based on Proven Davis Technical College Model

- 900 hours, hands-on training
- ACMA's CCT Certification
- Composites Center of Innovation and Technology
- Train the Trainer for Faculty
- National Network of Learning Innovation



National Network of Learning Innovation



Question for Team 3



**Jeff
Edwards**

UAMMI



**Joannie
Harmon Heath**

IACMI/CCS Corp.



Mary Ann Pacelli

- Program Manager, Workforce Acting Div. Chief, Competitions
- NIST Manufacturing Extension Partnership (MEP)
- 301-975-4850 (office)
- 202-660-2980 (cell)
- mary.pacelli@nist.gov



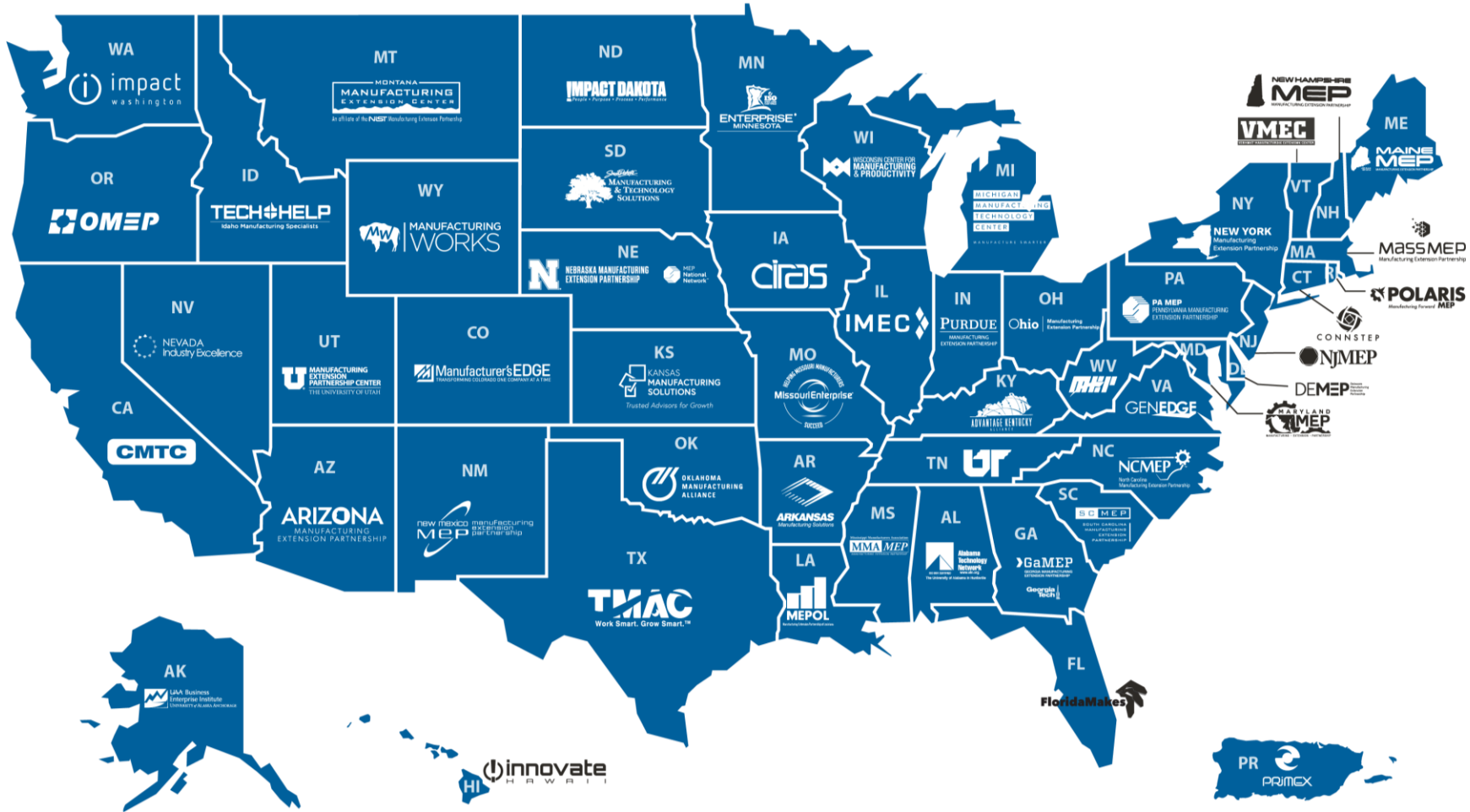
MEP
**National
Network™**

*The Go-To Experts for Advancing
U.S. Manufacturing*

Manufacturing Extension Partnership

- A unique public-private partnership that delivers comprehensive, proven solutions to U.S. manufacturers, fueling growth and advancing U.S. manufacturing.
- For the past 30 years, the MEP National Network™ has equipped small and medium-sized manufacturers with the resources needed to grow and thrive.
- Our industry experts work side-by-side with manufacturers to reduce costs, improve efficiencies, develop the next generation workforce, create new products, find new markets and much more.

MEP National Network



In FY2019, the MEP National Network interacted with 28,213 manufacturers, leading to \$15.7 billion in sales, \$1.5 billion in cost savings, \$4.5 billion in new client investments, and helping to create and retain 114,650 U.S. manufacturing jobs.

MEP National Network

Strength in Partnerships

- Through its collaborations at the federal, state and local level, MEP Centers work with manufacturers to develop new products and customers, expand and diversify markets, adopt new technology, and enhance value within supply chains.
- The MEP Program serves as a bridge to other organizations and federal research labs that share a passion for enhancing the manufacturing community.

MEP National Network

- 51 MEP Centers, in all 50 states and Puerto Rico, over 1,400 trusted advisors and experts at 375 MEP service locations, providing any U.S. manufacturer with access to resources they need to succeed
 - Partners in 14 of the 17 AMC Partner Communities
 - Partners in 19 open OEA projects
 - 11 of which include Cybersecurity work with MEP
 - Embedded staff in all 14 Manufacturing USA Institutes

Q&A



Michael Britt-Crane,
DoD Manufacturing Technology
Program Office

Wrap Up

- Join us for our final session:
 - Webinar 4: Today at 2:45 PM EDT, this final session will address Cybersecurity.
- If you have not registered for webinar 4, but would like to attend live you can register here <https://bit.ly/2VZHc8h>
- List of Resources: <https://bit.ly/2L0Yhs2>