



Welcome to MxD

Berardino Baratta

MBE Summit

April 16, 2024



**The Digital Manufacturing
& Cybersecurity Institute**

Exists To Increase U.S. Competitiveness



Bioindustrial Manufacturing
Twin Cities, MN



LIGHTWEIGHT INNOVATIONS
FOR TOMORROW
Advanced Manufacturing
Detroit, MI



America Makes
Additive Manufacturing
Youngstown, OH



ARM
ADVANCED ROBOTICS
FOR MANUFACTURING
Robotics Manufacturing
Pittsburg, PA



Photonic Integrated Circuits
Rochester, NY



Rapid Advancement in Process
Intensification Deployment
Rochester, NY



Cybersecurity & Digital Manufacturing
Chicago, IL



Flexible Hybrid Electronics (FHE)
San Jose, CA



Smart Manufacturing
Los Angeles, CA



Electrified Processes for Industry Without Carbon
Tempe, AZ



cybersecurity
manufacturing
innovation institute

Cybersecurity Manufacturing Innovation
San Antonio, TX



THE COMPOSITES
INSTITUTE

Composites Manufacturing Innovation
Knoxville, TN



Semiconductor Manufacturing
Raleigh, NC



Biopharmaceutical Manufacturing
Newark, DE



Advanced Regenerative
Manufacturing Institute
Regenerative Manufacturing
Manchester, NY



Advanced Fiber & Fabric Technology
Boston, MA



Advanced Modular Chemical Process Intensification
New York, NY





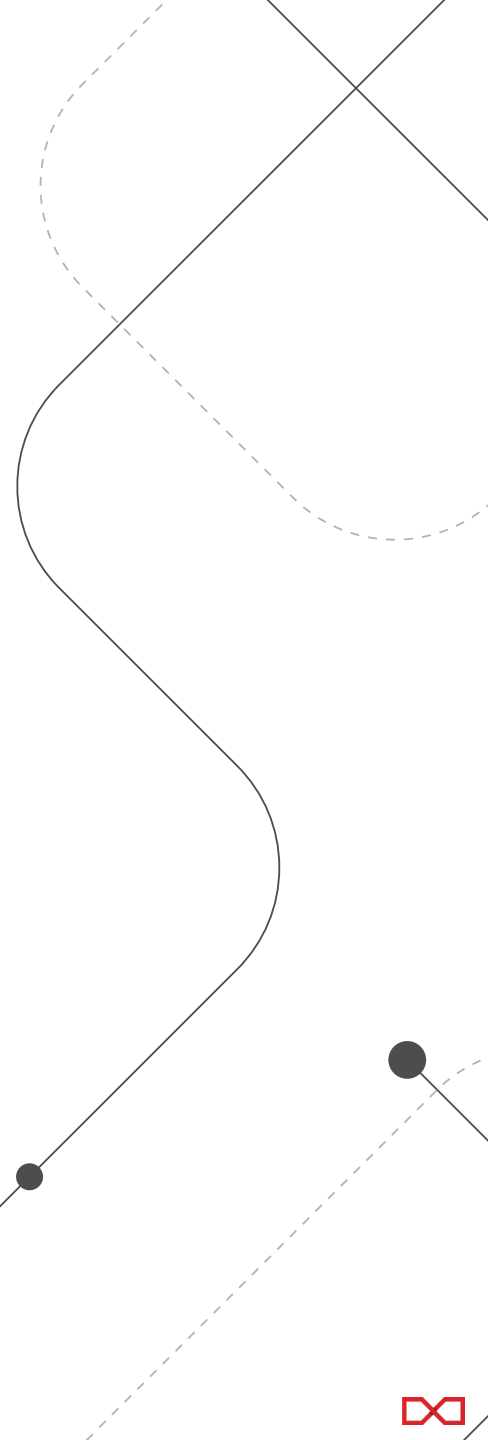
CONVENE
the Ecosystem



ADVANCE
Technology
Innovation &
Adoption



EMPOWER
the Workforce



MxD Ecosystem

Collaborating to Drive Impact



The Makeup of the U.S. Manufacturing Industrial Base

239,607 U.S. MANUFACTURING FIRMS



Manufacturing Industrial Base Impact to Economy



Contributes
24%
of GDP



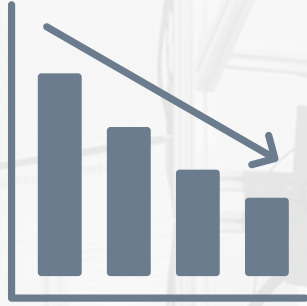
Employs
9.6% of
Workforce



Compensation
8.8%
Higher

A resilient manufacturing base is critical to economic prosperity and national security

Manufacturing Industrial Base Is Facing Challenges



≈20k Lost

Industrial base is shrinking with **11% of the Smallest Manufacturers lost** in 10 years



#1 Target

Since 2021, manufacturing is the **top cybersecurity attacked industry**



2.1M Gap

U.S. manufacturing jobs expected to go **unfilled by 2030** due to a skills shortage

The DoD's Challenges Align with Industry's

The Organic Industrial Base (OIB) = 47 government-owned sites and thousands of facilities

Need to modernize

“The organic industrial base was designed and really implemented in World War II, and so what we have is really a 20th century capability to support a 21st century Army and joint force.”

General Edward Daly, AMC

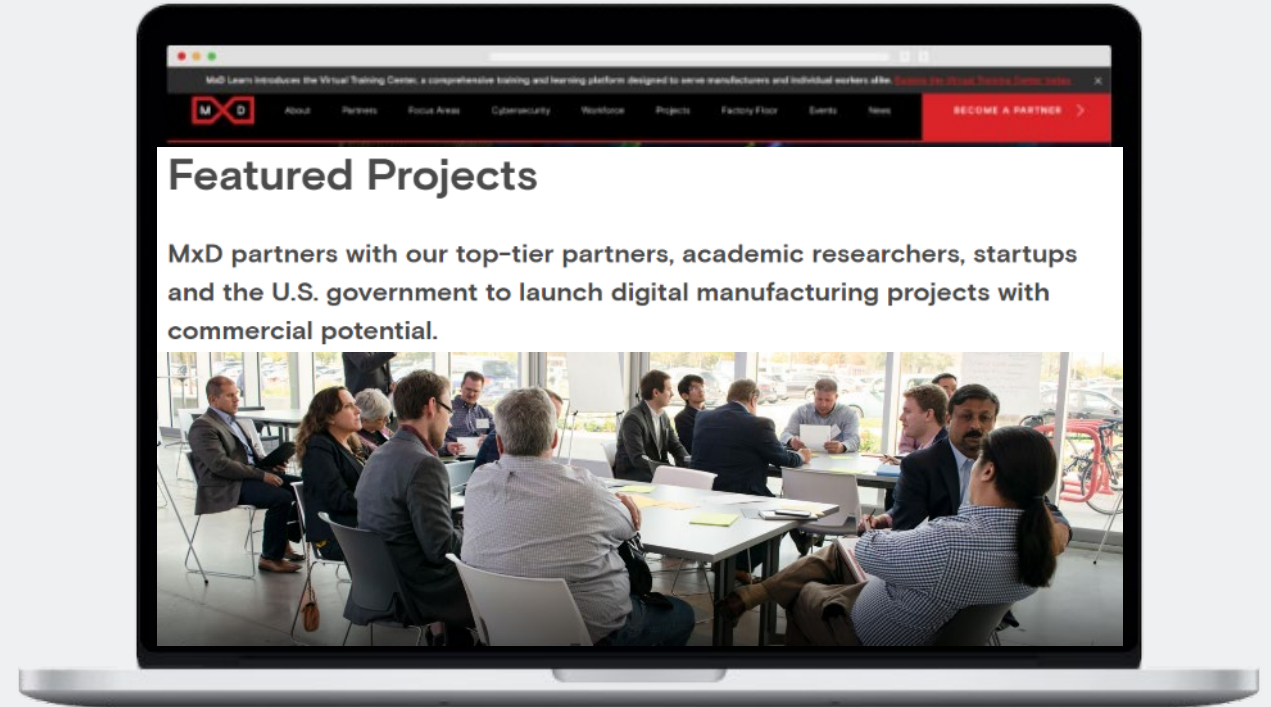
MxD supports OIB Modernization by delivering:

- **Assessments**
- **Pilot projects**
- **Roadmapping exercises**



MxD Projects

Collaborating with
Members to Address
Industry Needs



mxdusa.org/projects



Cyber

National Center For Cybersecurity In Manufacturing

Securing America's Supply Chain



**Awareness
Building and
Training**



**Cybersecurity
Tools and
Services**



**Cybersecurity
Workforce
Programs**



**Support
Standards
Compliance**



The Threat for Manufacturing Is Increasing

#1

Since 2021, manufacturing has been the top attacked industry, with ransomware accounting for 23% of the attacks

61%

of incidents at organizations with network connected operations technology (OT) were in the manufacturing industry

2,204%

increase in reconnaissance against industrial controlled operations technology and software accessible by the internet

MxD Cyber Resource Hub

One-stop Resource for Cyber Content & Tools



mxdusa.org/cyber





2.1 Million

U.S. manufacturing jobs expected to go unfilled by 2030 due to a skills shortage



70%

of surveyed DIB companies identified skilled workforce challenges as a significant impediment



187,862

or 75% of U.S. manufacturers employ 20 or fewer people, leaving them with limited resources



50%

of all employees will need reskilling due to adopting new technologies, by 2025



The Need for Workforce Solutions



MxD Learn: Define, Develop, Do

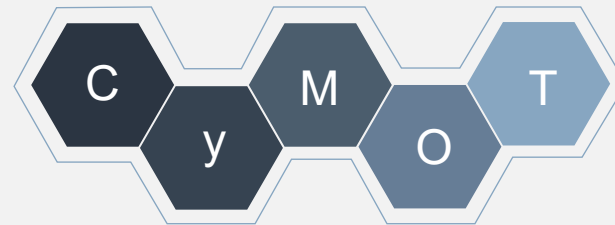
DEFINE

Identify the Future of Work



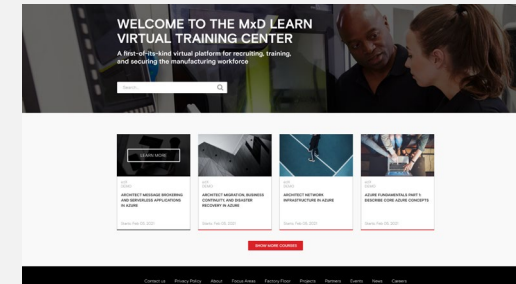
DEVELOP

Create the Training Opportunities



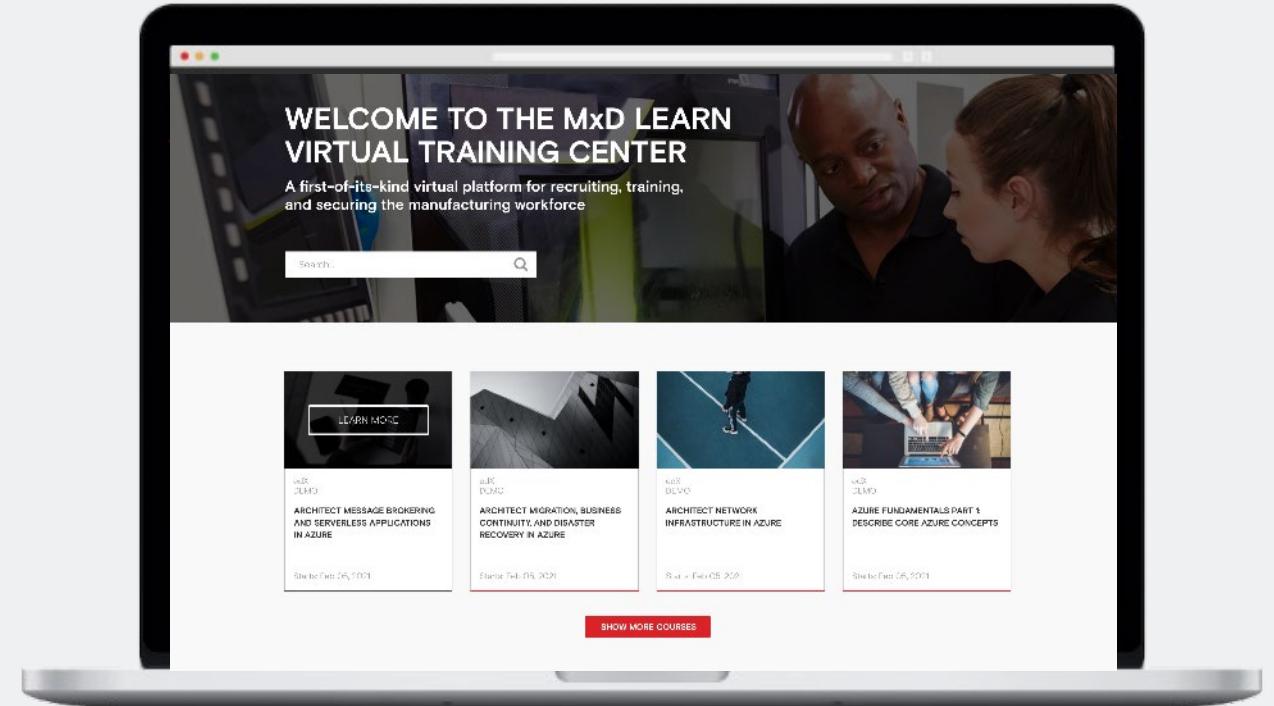
DO

Provide Access to Hands-on Learning



MxD Learn Virtual Training Center (VTC) Platform

Improving Access to
Learning



mxdusa.org/vtc

Success in 5 years



**Digitized and Secured
10,000 Manufacturers**



**Upskilled 1,000,000
Manufacturing Workers**



**Modern and Resilient
Organic Industrial Base**



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