INNOVATION AND COLLABORATION: THE MANUFACTURING USA ADVANTAGE

Manufacturing USA and IACMI

10 Years of Bridging the Innovation Gap

IACMI 2025 Members Meeting

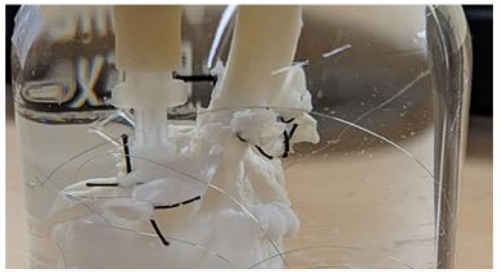
Mike Molnar
Director, NIST Office of Advanced Manufacturing

An interagency team building partnerships with U.S. industry and academia

Agenda

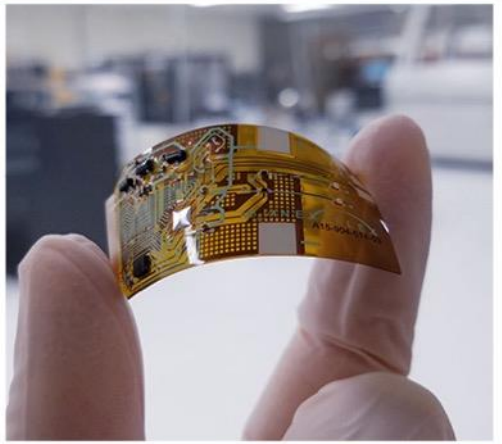
- Manufacturing USA Institutes: National Assets
- IACMI and Manufacturing USA – 10 years of Impact
- The International Challenge

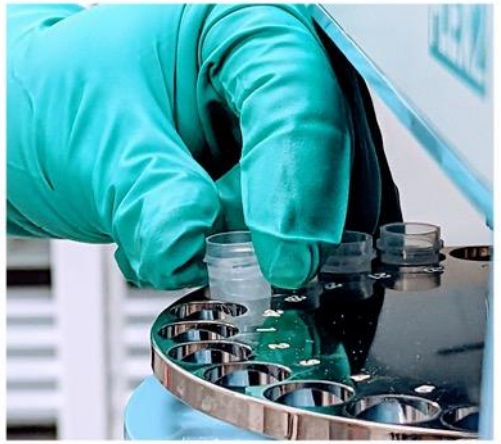



Manufacturing USA Institutes: National Assets

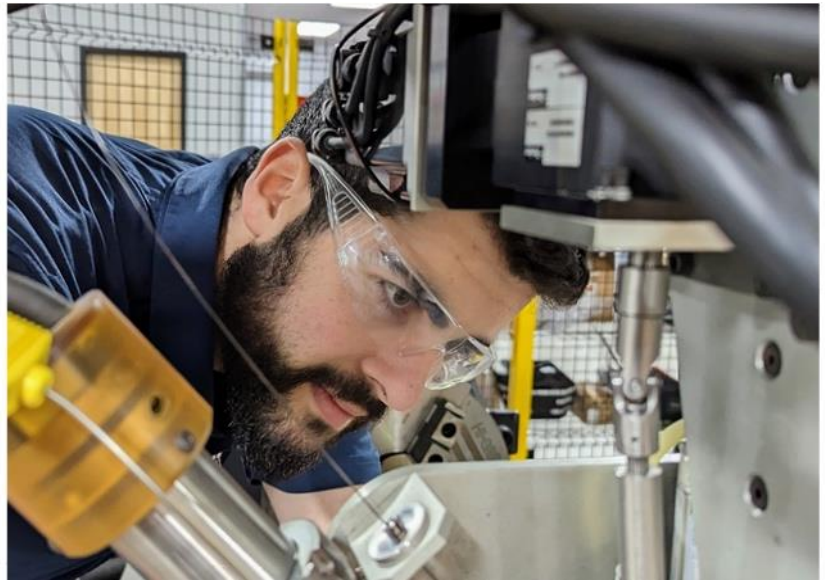



National Needs: Invented Here, Made Here

- U.S. leads the world in discovery and innovation.
- Institutes were created to help ensure these inventions get out of the labs and turned into products **manufactured in the U.S.** – instead of other countries.



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About Manufacturing USA

VISION: Securing U.S. Global Leadership in Advanced Manufacturing

MISSION: Connecting people, ideas, and technology to:

- Solve industry-relevant advanced manufacturing challenges
- Enhance industrial competitiveness and economic growth
- Strengthen our economic and national security

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National Partners: An All-of-Government Approach

18 Institutes
Members in
50 States +
Puerto Rico

9 Partner
Federal
Agencies

DOC sponsors
2 Institutes
Serves as
National Program
Office

DOE sponsors
7 Institutes

DOD sponsors
8 Institutes

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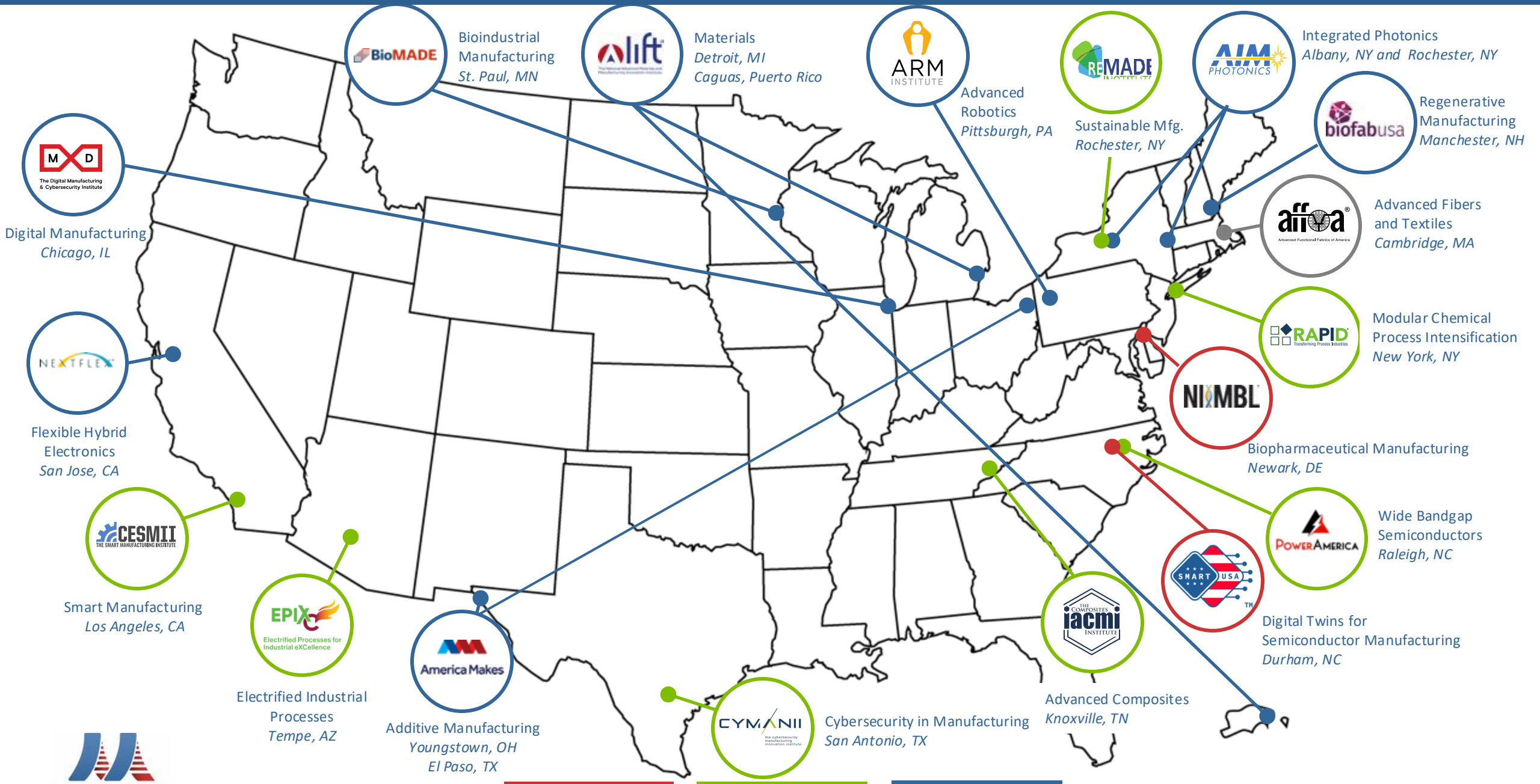
Manufacturing USA Network Today



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Dept. of Commerce | Dept. of Energy | Dept. of Defense

Manufacturing USA – Institutes and Clusters

ELECTRONICS

AIM Photonics
Integrated Photonics
Albany, NY
Rochester, NY

NextFlex
Flexible Hybrid Electronics
San Jose, CA

Smart USA
Digital Twins for Semiconductor Manufacturing
Durham, NC

PowerAmerica
Wide Bandgap Semiconductors
Raleigh, NC

MATERIALS

AFFOA
Advanced Fibers and Textiles
Cambridge, MA

IACMI – The Composites Institute
Advanced Composites
Knoxville, TN

LIFT – The National Advanced Materials and Manufacturing Innovation Institute
Materials
Detroit, MI
Caguas, Puerto Rico

REMADE Institute
Sustainable Manufacturing
Rochester, NY

DIGITAL/AUTOMATION

America Makes
Additive Manufacturing
Youngstown, OH
El Paso, TX

ARM Institute
Advanced Robotics
Pittsburgh, PA

CESMII – The Smart Manufacturing Institute
Smart Manufacturing
Los Angeles, CA

CyManII – the cybersecurity manufacturing innovation institute
Cybersecurity in Manufacturing
San Antonio, TX

MxD – The Digital Manufacturing & Cybersecurity Institute
Digital Manufacturing
Chicago, IL

BIOMANUFACTURING

BioFabUSA
Regenerative Manufacturing
Manchester, NH

BioMADE
Bioindustrial Manufacturing
St. Paul, MN

NIIMBL
Biopharmaceutical Manufacturing
Newark, DE

ENERGY/PROCESSES

EPIC – Electrified Processes for Industrial eXCellence
Electrified Industrial Processes
Tempe, AZ

RAPID – Transforming Process Industries
Modular Chemical Process Intensification
New York, NY

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Manufacturing USA Network

Last year Impacts

Collaborate on
920+
major applied research and development projects

Work with
2,900+
Member Organizations

Engage
150,700+
people with workforce knowledge and skills in advanced manufacturing

Invest
$539.9M
in these activities from state, industry, and federal funds

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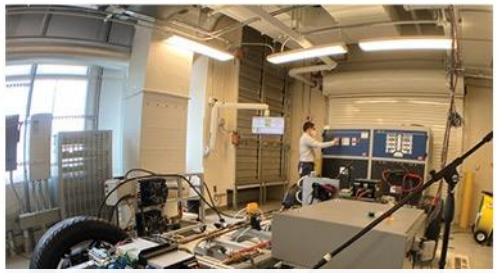
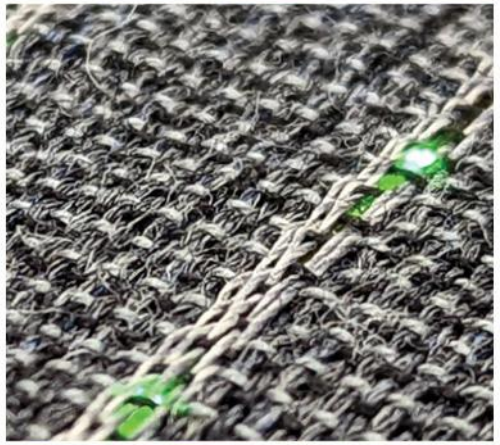
Our efforts help ensure **what's invented here is made here by a skilled American workforce.**

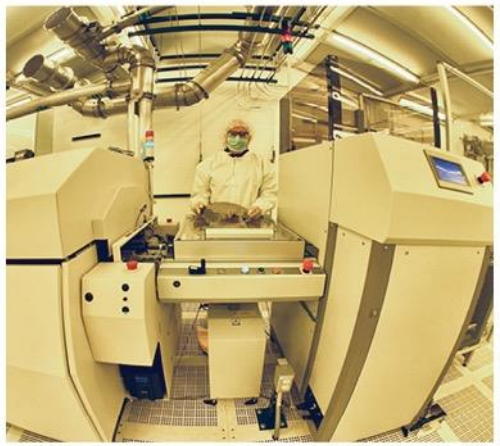





IACMI and Manufacturing USA – 10 years of Impact






IACMI's Public-Private Partnership

A NETWORK OF INNOVATION

As a consortium of nearly 200 manufacturers, universities, national labs, trade organizations, and government agencies, IACMI harnesses the power of public-private partnerships to drive innovation, bolster domestic supply chains, and cultivate a skilled workforce to secure America as a global leader in advanced manufacturing.

70% INDUSTRIAL MEMBERS ARE SMEs

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IACMI's Impact: A Decade of Innovation

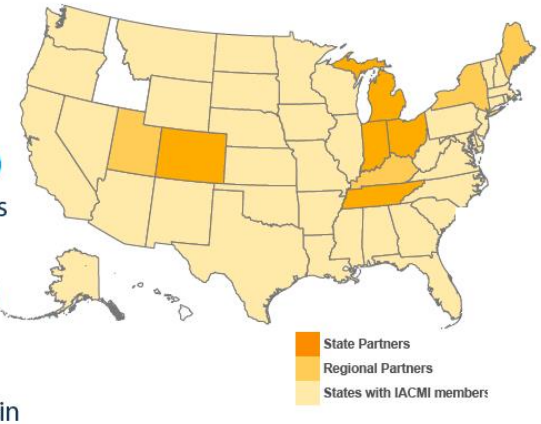
For 10 years, IACMI has implemented a formula that works
Technical Innovation + Workforce Development = Economic Growth

Public-Private Collaborations

170+
Active IACMI Members

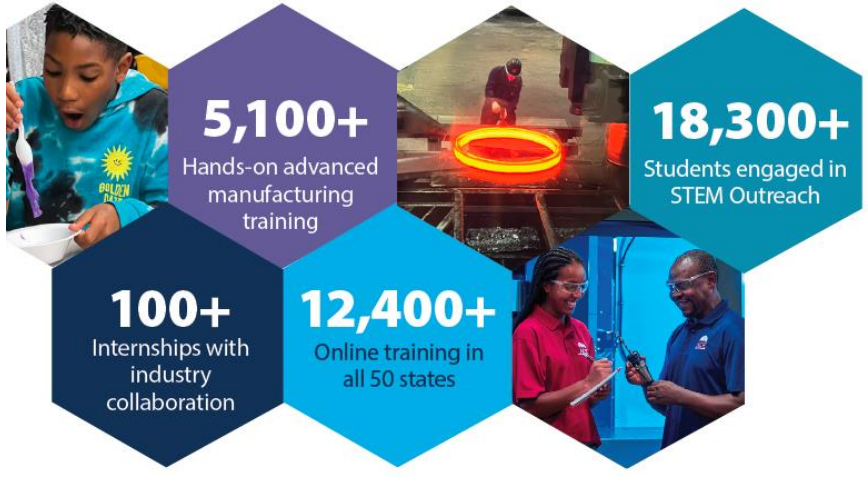
>70%
Industrial members are SMEs

4,500
Professionals convened from industry supply chain



Leveraging Resources

Workforce Development



Technical Innovation

IACMI 1.0 projects

60+
industry-led R&D projects

25
commercial products & technologies

IACMI Working Groups

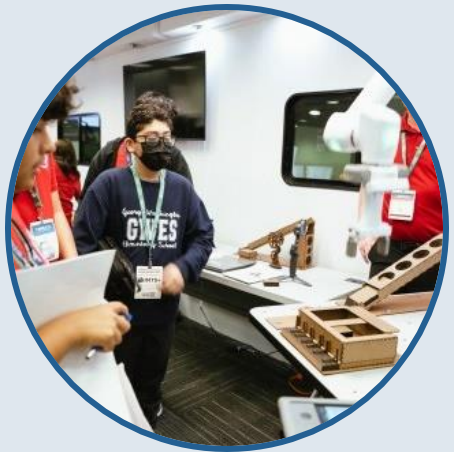
- High Rate Aerostructures Fabrication
- Future Mobility/Vehicles Technology
- Energy
- Infrastructure and Construction
- Composites Recycling

IMPACTS

ACCELERATING INNOVATION, EMPOWERING THE WORKFORCE

Accelerating TRL in wind blade manufacturing, starting with 11 partners demonstrating 9 meter wind turbine blade is lighter, less expensive, stronger, more energy-efficient, with reduced cost and production time.
IACMI members then scaled the blade technology to 62 meters.

IACMI has trained more than 10,000 people across 50 states in CNC machining fundamentals for metals and composites through America's Cutting Edge (ACE) program created by DoD to restore U.S. machine tools sector.



SUCCESS STORIES

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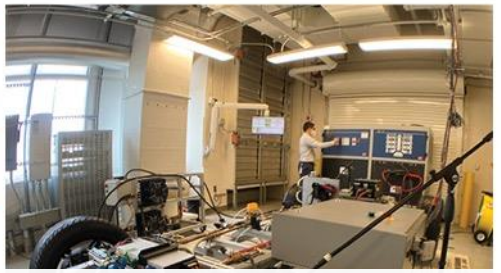
10TH ANNIVERSARY

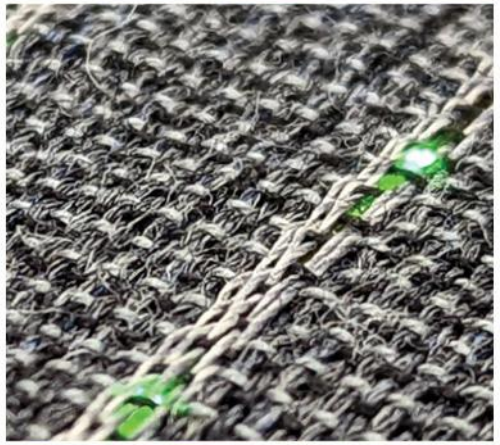
10 Impact Areas Over 10 Years

- Providing a New Model for Innovation
- Creating Industry Roadmaps
- Scaling & Onshoring Emerging Industries
- Reinvigorating Existing Industries
- Creating Factories of the Future
- Rebuilding Supply Chains Around New Technology
- Growing Regional Economies
- Engineering Jobs of the Future
- Building National Platforms for Workforce
- Championing Energy Security

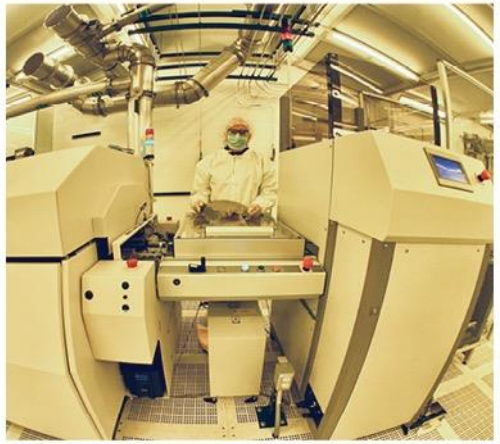





The International Challenge






Chinese Manufacturing Innovation Centers (MICs)

Goal – to **significantly drive innovation and domestic production**

- MICs are part of the larger "Made in China 2025" national strategy
  - China's 14th Five-Year Plan for 2021-2025 focuses on the growth of advanced manufacturing with **hundreds of millions $ in direct investment**
- Significant growth in centers from 2016 – 2025
  - *33 known to date*
  - *At least 40 planned by end of 2025*
  - *Additional growth in regional innovation centers*

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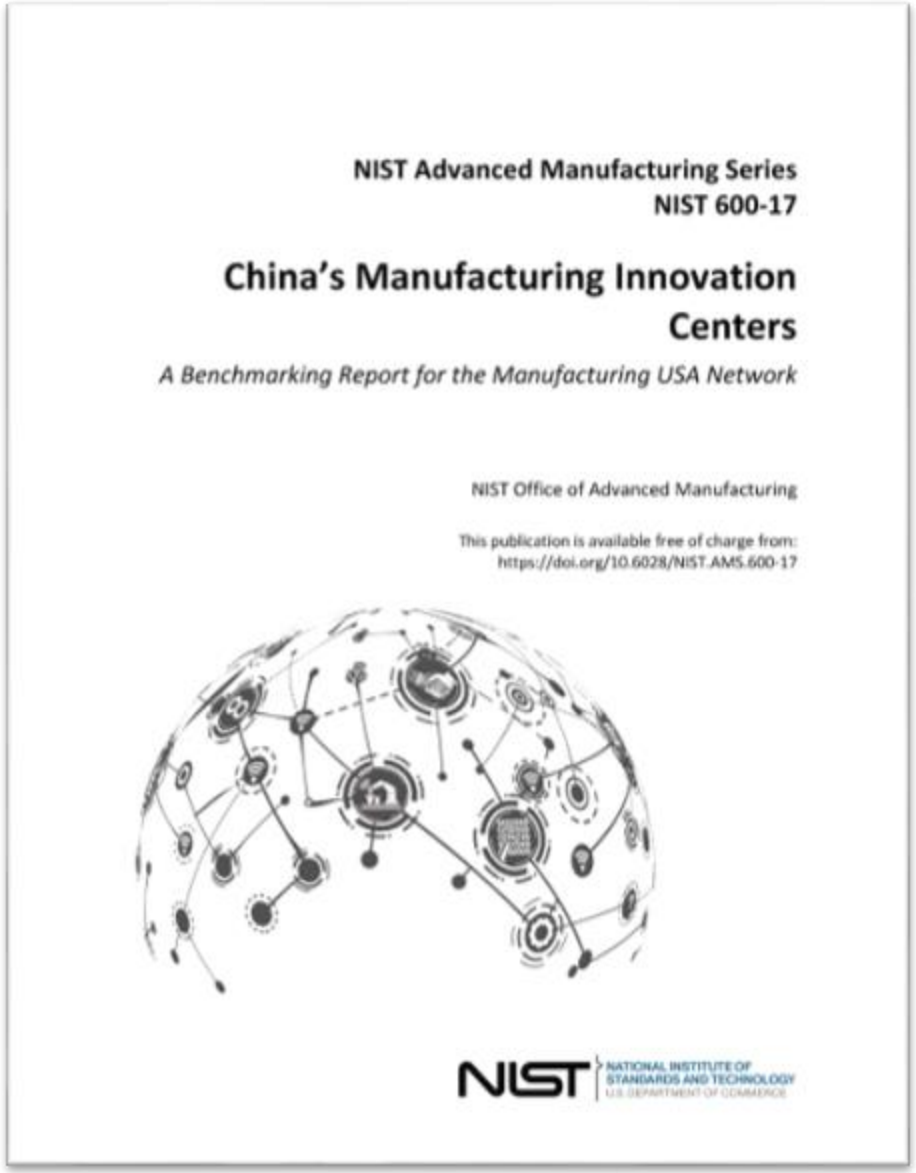
NIST Benchmark Report on China's Mfg Innovation Centers

- Focus on advanced manufacturing technology barriers
- Linkages to key research labs
- Creation of industrial hubs
- Financing and Sustainment models



Read the report here:

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Global Competition in Manufacturing Innovation

	Germany	United States	China
Manufacturing Program	Fraunhofer Institutes	Manufacturing USA	Manufacturing Innovation Centers
Year Program Started	1949	2014	2016
No. of Institutes	76	18	33 ➔ *40*
% of National GDP from Manufacturing (2023)	19%	10%	26%
Institute Budget Relative to Manufacturing USA	2-10x	1x	10-100x

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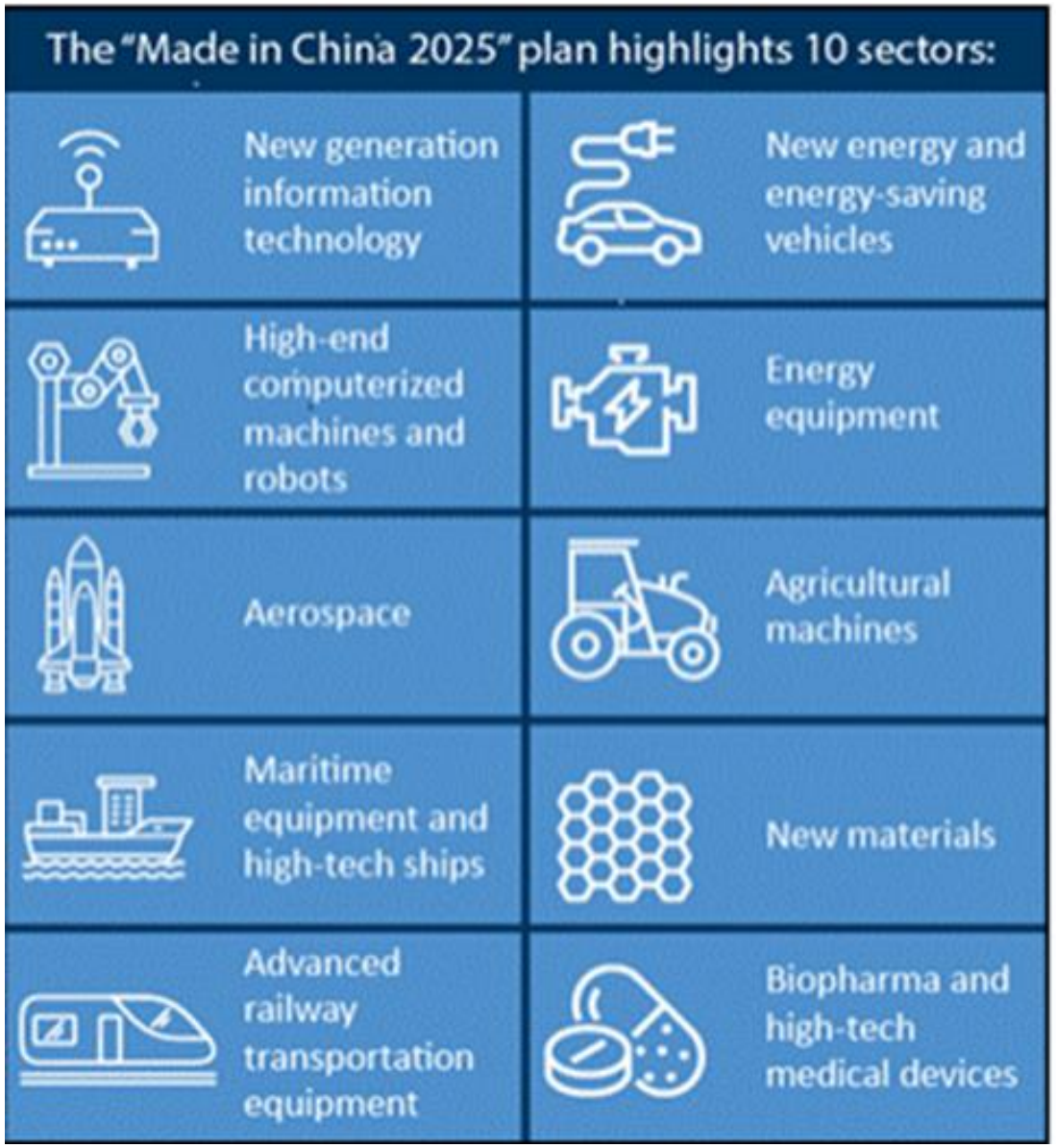
MICs Positioned as Nexus of Innovation Hubs

- Identify **key technology barriers** to innovation in key areas – set by a central party
- **Focus innovation centers** on technology needs
- Coordinate with **key state laboratories** and industries
- **Create innovation hubs**

Made in China: 10 Target Industry Sectors

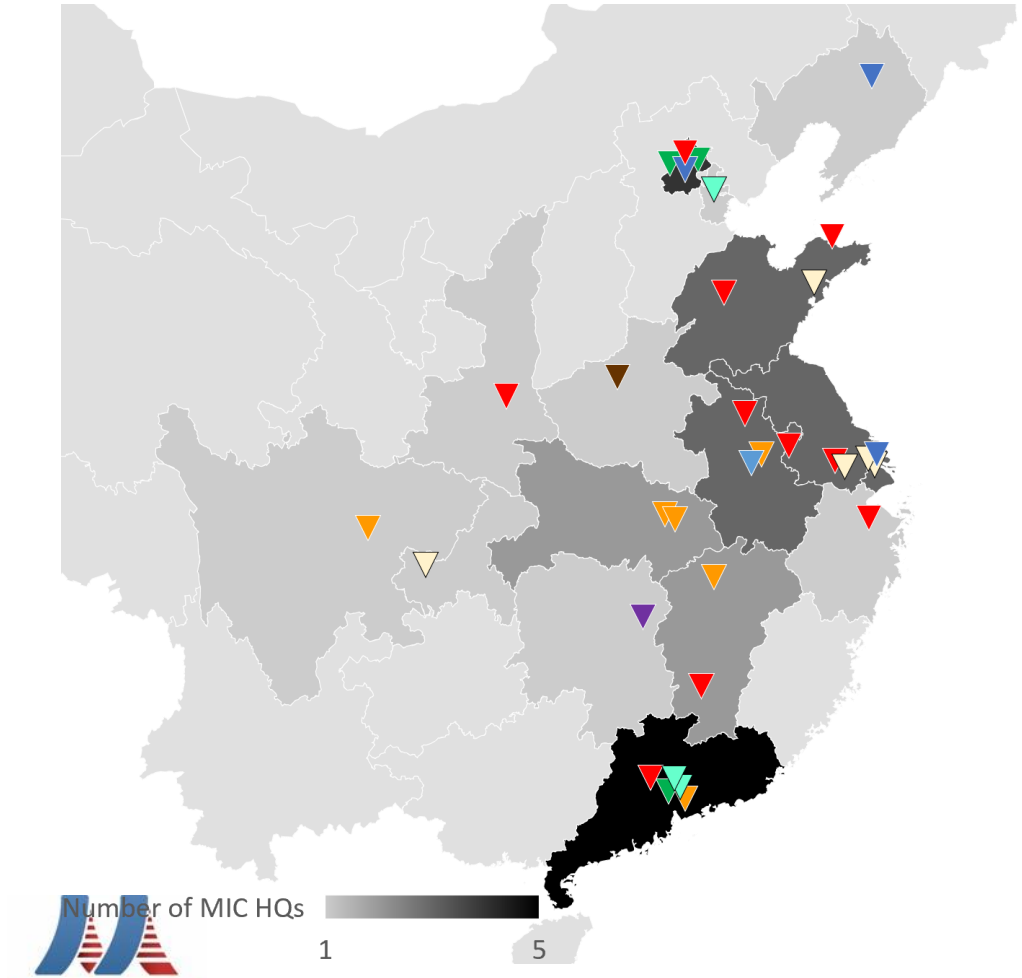
- China identified **10 key industrial sectors** to gain leadership through innovation
- What are the **key technology barriers** to leadership for each of these sectors?
- **Manufacturing Innovation Centers** are then established for each of these technologies.
- Goal of **40 MICs** by the end of 2025
- Coordinate with **key state laboratories** and industries
- Centers are to be the nexus of **innovation hubs**



China's Manufacturing Innovation Centers by Target Industry Sector

Headquarter Locations*

*Not mapped: satellite centers across the whole geography of China



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New Energy Vehicles

1. Power Battery
2. Intelligent IoT Connected Vehicle
3. New Energy Storage

Advanced Rail Transit Equipment

4. Advanced Rail Transportation Equipment

Agricultural Technology

5. Agriculture Machine

Maritime Equipment and High Tech Vessels

6. Basic Components of General Machinery

Advanced Information Technology

7. Information Optoelectronics
8. Digital Design and Manufacturing
9. 5G Medium & High Frequency Device
10. Intelligent Voice
11. Ultra HD Video
12. Virtual Reality

Automated Machine Tools and Robotics

18. Robot Innovation
19. Humanoid Robotics
20. National and Local coBuild Embodied AI Robot

Advanced Electrical Equipment

13. Integrated Circuit and Intelligent Sensor
14. Smart Sensor
15. Integrated Circuit Characteristic Process and Packaging Test
16. Silicon-Based Heterogenous Integration
17. High-end Intelligent Household Appliances

Advanced Materials

21. Additive Manufacturing
22. National Printing and Flexible Display
23. Lightweight Materials Technology
24. Advanced Functional Fiber Innovation
25. Rare Earth Functional Materials
26. Advanced Printing & Dyeing Technology
27. Glass New Material
28. Graphene Innovation
29. High-Performance Membrane Materials
30. Micro Nano Manufacturing

Biopharmaceuticals and Advanced Medical Device Products

31. High-Performance Medical Device
32. Modern Chinese Medicine
33. Molecular Drug Innovation

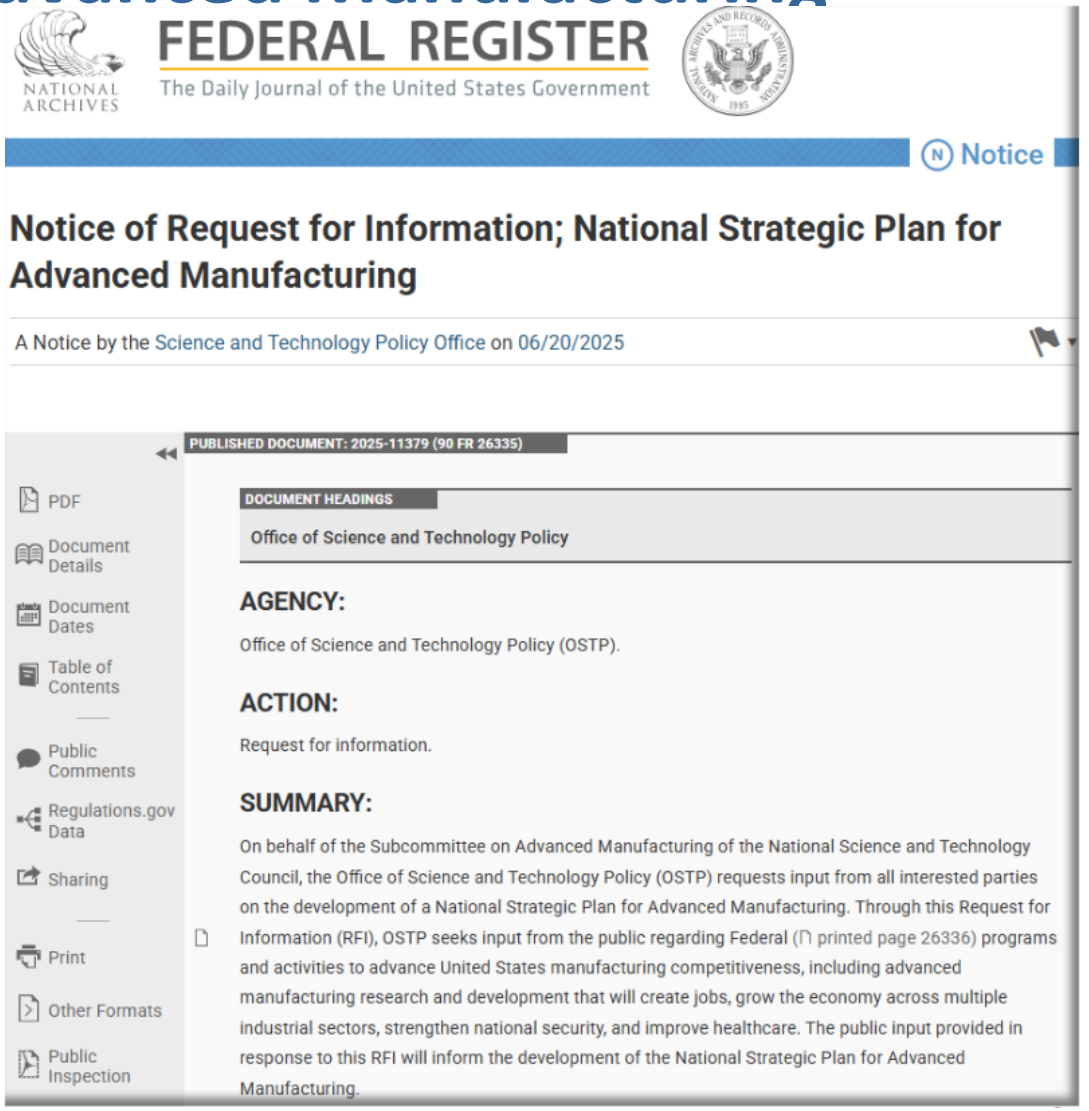
Aviation and Spaceflight Equipment

(None known yet)

We need your input – New Strategic Plan

2026-2030 National Strategic Plan for Advanced Manufacturing

White House OSTP/NSTC RFI now live



NATIONAL ARCHIVES

FEDERAL REGISTER

The Daily Journal of the United States Government

Notice

Notice of Request for Information; National Strategic Plan for Advanced Manufacturing

A Notice by the Science and Technology Policy Office on 06/20/2025

PUBLISHED DOCUMENT: 2025-11379 (90 FR 26335)

PDF
Document Details
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Public Inspection

DOCUMENT HEADINGS

Office of Science and Technology Policy

AGENCY:

Office of Science and Technology Policy (OSTP).

ACTION:

Request for information.

SUMMARY:

On behalf of the Subcommittee on Advanced Manufacturing of the National Science and Technology Council, the Office of Science and Technology Policy (OSTP) requests input from all interested parties on the development of a National Strategic Plan for Advanced Manufacturing. Through this Request for Information (RFI), OSTP seeks input from the public regarding Federal (⊓ printed page 26336) programs and activities to advance United States manufacturing competitiveness, including advanced manufacturing research and development that will create jobs, grow the economy across multiple industrial sectors, strengthen national security, and improve healthcare. The public input provided in response to this RFI will inform the development of the National Strategic Plan for Advanced Manufacturing.

Manufacturing USA Modern Makers

Modern Makers are ***individuals*** whose sense of purpose embodies the Manufacturing USA mission to secure the future of U.S. manufacturing through innovation, education, and collaboration.

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Questions?

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Get involved: ManufacturingUSA.com @MFGUSA MFGUSA