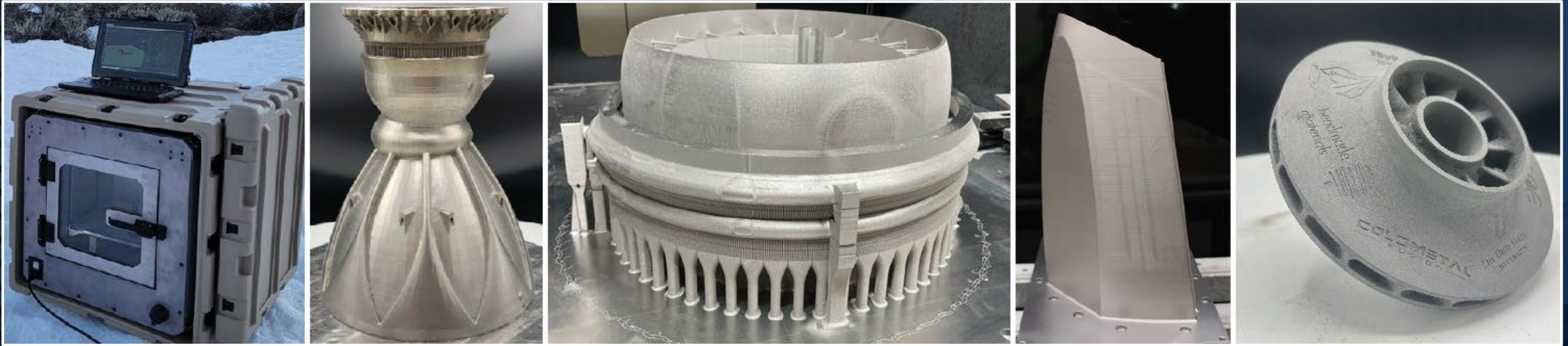




America Makes

AmericaMakes.us

The National Additive Manufacturing Innovation Institute



America Makes Overview – August 2025 ORAU/Manufacturing USA Webinar

Proud to partner with:



VISION	To be the driver for additive manufacturing (AM) innovation, technology, and education
MISSION	Accelerate the adoption of AM to advance U.S. manufacturing competitiveness and security
ACHIEVING THE MISSION	CONVENING the most brilliant minds from government, industry, and academia to accelerate AM innovation COORDINATING AM technical and workforce data to transform industry CATALYZING industry through collaborative projects, delivering high value and high impact

MII Technology Vertical	Additive Manufacturing / 3D Printing
MII Established	12 August 2012
Institute Location	Youngstown, Ohio
Non-Profit Legal Entity	National Center for Defense Manufacturing and Machining (NCDMM)

Membership	>300 members as of July 2025 from Industry, Academia, and Government
Satellite Centers	University of Texas at El Paso (UTEP), Texas A&M Engineering Experiment Station (TEES), National Institute for Aviation Research at Wichita State University (NIAR)
Facility	12,000 ft ² of convening and collaboration space in downtown Youngstown, Ohio

Expenditures and Cost Share	Total Portfolio: 581.9M
Project Portfolio	364 projects (107 active)
Contract Vehicle	Cooperative Agreement (CA) managed through Air Force Research Laboratory (AFRL)

OUR MEMBERS

A collaborative environment accelerating the adoption of AM and the nation's global manufacturing competitiveness

300+ members from industry, academia, government, workforce and economic development organizations across 42 states



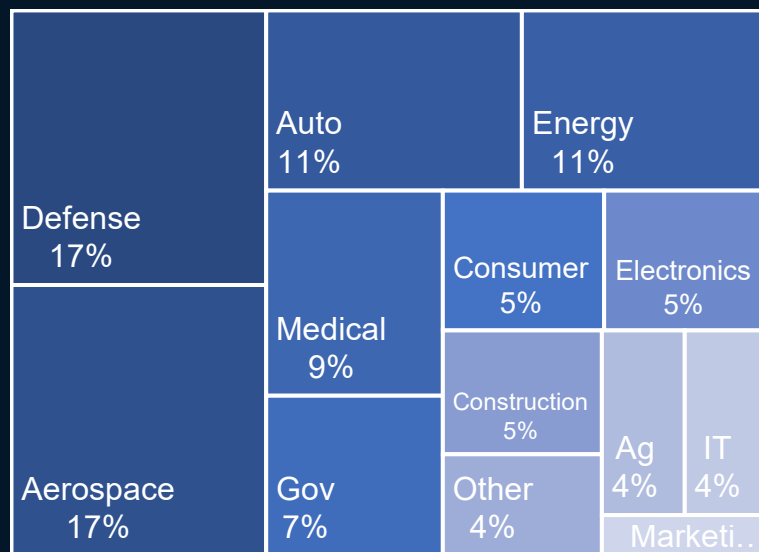
Membership Overview

Annual Growth



The Institute has seen substantial growth over the past three years.

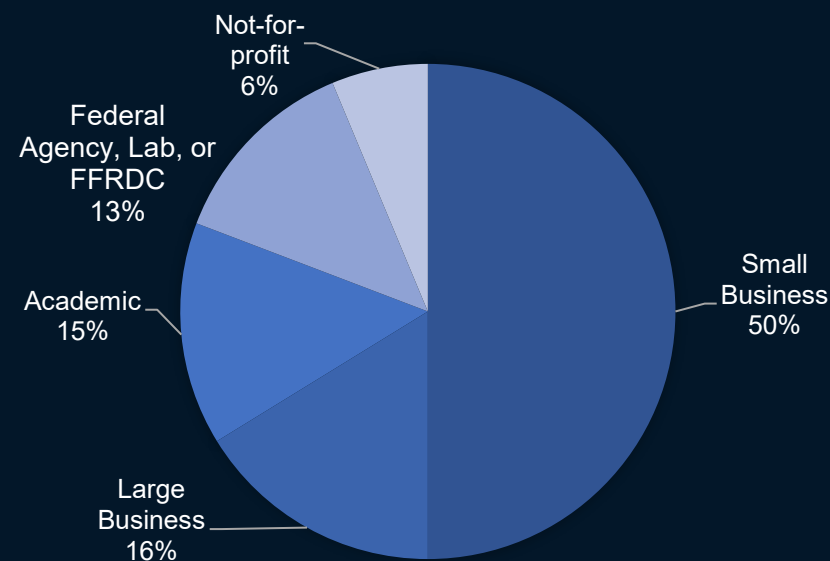
Industry Composition



Wide diversity of industries represented in membership.

Led by Defense and Aerospace.

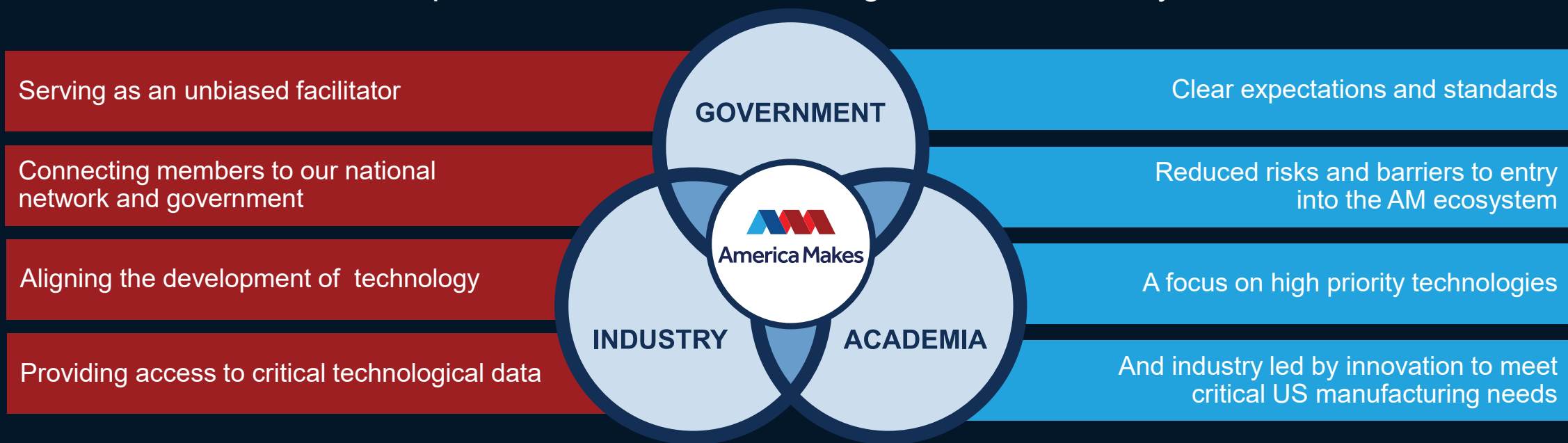
Organization Type



Industry makes up two-thirds of the membership.

THE ADVANTAGE

As the nation's leading public-private partnership for AM technology and education, America Makes operates at the intersection of government, industry and academia...



...to advance AM technology, drive innovation and accelerate adoption through collaboration



FOCUS AREAS



Technology Development

Identify gaps in AM technology through our roadmap, close them, and advance the industry through our collaborative member network.



Education and Workforce Development

Educate, train, and grow the advanced manufacturing workforce by developing industry-recognized credentials, standards, and pathways in AM.



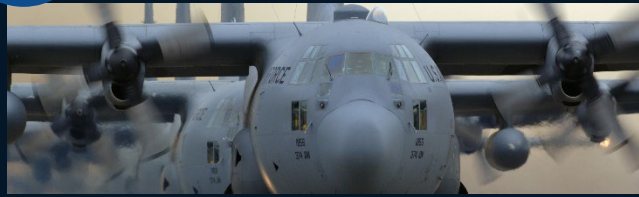
Industrial Base Integration

Grow awareness and adoption of AM across the U.S. through working with regional, state and national stakeholders.

SUCCESSSES



Technology Development



NEED

Sustainment of legacy aircraft for the Air Force

SOLUTION

Address qualification and certification criteria and introduce AM techniques in the Air Force supply chain

IMPACT

Reduced lead time for and creating design flexibility for legacy aircraft parts and maintenance



Education & Workforce Development



NEED

Programs to fill the skills gap in advanced manufacturing

SOLUTION

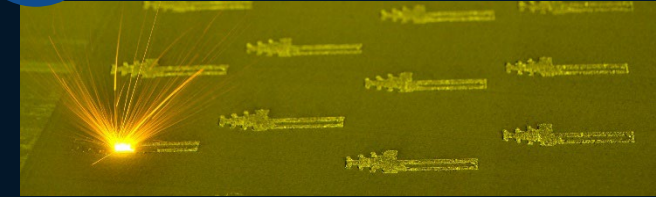
Develop advanced manufacturing curriculums and content that can be scaled nationally

IMPACT

Updated credential framework; New e-learning module; Series of national workshops for underserved and veteran populations



Industrial Base Integration



NEED

Regional awareness and adoption of available AM technologies

SOLUTION

Analyze regional opportunities to increase advanced manufacturing adoption.

IMPACT

Creation of a roadmap, re-deployable playbook, and training tools to grow the region's AM footprint

Why Aren't We Done Yet?

Important things still need to be solved in all three strategic focus areas: Technology, EWD, and Ecosystem Development

Challenges

- Repeatability and reproducibility
- **Qualification**
 - Material
 - Process
 - Product
- **Qualification cost and efficiency**
- **Inspectability – technology and efficiency**
- Fracture critical parts
- Certification
- Cost and cost reduction
- **Scaling to full production**
 - Equivalence and requalification efficiency
- Can vs. should
- Access to capital
- **Vendor qualification**

Known Limitations

- **Limited number of commercially available materials**
- **Limited number of qualified sources of supply**
- Limited knowledge base
- Limited implementation of DFAM
- **Limited trained workforce**
- Limited manufacturing operations experience
- **Limited size of parts**
- Limited feature sizes (e.g. section thickness)
- Most suited towards high mix, low volume applications
- **Serviceability, maintenance, and limitations** not well understood



Distributed Ecosystem

Purpose of an America Makes Satellite Center is to **extend the reach of the America Makes mission** and to complement and expand America Makes' current regional, industrial, and technological footprint.

Enhance America Makes' collaborative infrastructure for the open exchange of AM information and research, engaging with local companies and educational institutions to supply education and training in AM technologies, and focusing on the transition of additive technology from the research lab to commercialization.

Satellite Center – How Does America Makes Extend the Model?

Satellite Centers

Managed through an MOU between the Host Organization and America Makes, the Satellite Center is considered a Platinum or Gold member sitting on the Executive Committee and coordinates all supporting organization relationships locally.

Benefits to America Makes Mission

- Regional, industrial, and technological expansion of the America Makes collaboration model and footprint.
- Additional membership outreach and program management to support the long-term sustainability of the institute.
- Continued growth of the America Makes research portfolio without requiring additional investment from America Makes member organization.
- Full use of America Makes branding and network to maximize the acquisition of R&D funding, workforce efforts and the effectiveness of regional outreach initiatives.
- Alignment with deep expertise in regions to support DoD goals.



Youngstown Innovation Hub for Aerospace and Defense

VISION: Establish the Hub as epicenter for market-ready AM technologies to strengthen Aerospace & Defense industrial base

Investments

26M + 30M + 11M

State investment

Federal Match

Local Match



Impacts (and more)

162M + 450 + 185

Economic Impact

Job Creations

STEM Certificates

- Increasing the **IP funding** for commercialization through research grants
- Creating a **talent pipeline** for manufacturers in our backyard
- Strengthening the region's **AM commercialization** programs to get products to market faster
- Securing **capital investments** for early-stage business development and new equipment for existing manufacturers
- Creating the **physical and program infrastructure** to support SMMS in entering the aerospace and defense industries
- Attracting aerospace and **defense supply chain partners** to the region



America Makes

When America Makes America Works

