

DEPARTMENT OF DEFENSE
MANUFACTURING INNOVATION INSTITUTES



Quick Start Opportunities Guide for Academic Institutions

Sharpen the focus of your funded research!



**PARTNER UP TO ADVANCE YOUR
IMPACT & REACH**

Engaging with the institutes is a unique method for universities, community colleges & other educational institutions to network with and understand the needs of industry and government, so that targeted manufacturing research can be undertaken for the benefit of the institution, individual, and students. Cutting edge sponsored research enhances the reputation of the institution. For students, institutes provide opportunities for hands-on training & access to internship leading to jobs.

“The University of Connecticut is involved in five institutes in the Manufacturing USA network. A major benefit to our faculty is the opportunity to work closely with industry on relatively high TRL projects that have high impact in emerging technology areas in manufacturing.”

- Professor Michael Accorsi, Senior Associate Dean, University of Connecticut School of Engineering

**MAKE AMERICA
MAKE AGAIN**

U.S. manufacturing and innovation is essential to American economic and national security. Maintaining U.S. influence and access to markets in a stable global environment contributes to our prosperity and standard of living. The United States asks its warfighters to put their lives on the line every day to protect and preserve these interests and thus the well-being of the American people. It is the responsibility of the Department of Defense (DoD) to innovate and equip our forces with the best tools possible, made by Americans in the U.S.

The DoD Manufacturing Technology Program sponsors eight manufacturing innovation institutes with headquarters and hubs across the country. Each institute is a public-private partnership designed to overcome the challenges faced by manufacturing innovators in a variety of technology areas (see back for more information). While each institute operates in its own unique ecosystem, the institutes offer common capabilities: providing access to state-of-the-art tools and equipment that are otherwise beyond the reach of most businesses, implementing targeted education and workforce development training programs, and encouraging project investments in applied research & industrially-relevant manufacturing technologies.

The DoD institutes bring new technologies to U.S. warfighters using a combined \$600 million in federal investment from the DoD and \$1.2 billion matching funds from industry, academia, and state governments. Institute members include nearly 1,000 organizations across defense industry, commercial manufacturers of all sizes, start-ups, universities, community colleges, and state or local economic developers in active partnership with the U.S. Federal Government.

The ability of the military to respond to an emergency depends on our Nation’s ability to produce needed parts and systems, healthy and secure supply chains, and a skilled U.S. workforce.

These industry-led public-private partnerships develop these capabilities & are defense-relevant, critical to the U.S. economy, & positioned to deliver value to their customers, & our nation.



**STRONG
COLLABORATION**

- Collaborate with industry, academia, and government
- Collaborate to design & execute innovative apprenticeship & educational programs
- Roadmap future technology

**LICENSE RESEARCH &
INTELLECTUAL
PROPERTY**

- Create IP through institute funded research
- Utilize your own organization’s research
- Use the institutes’ state of the art facilities to further manufacturing technology

FOSTER PREEMINENCE

- Enhance department reputation by providing employable students trained inline with industry needs
- Create content consistent with the latest technology

**SOLVE
MANUFACTURING
PROBLEMS**

- Create ecosystems that positively impact the U.S. economy
- Solve applied research problems faced by industry

DEPARTMENT OF DEFENSE
MANUFACTURING INNOVATION INSTITUTES



Quick Start Opportunities Guide for U.S. Manufacturers

Strengthen your bottom line!



**MAKE AMERICA
MAKE AGAIN**

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**ACCELERATING PRODUCT-TO-MARKET
LEADS TO STRONGER
PERFORMANCE**

In this global marketplace, developing the next generation of advanced manufacturing capabilities requires the U.S. to encourage more collaboration between companies, customers and the government in order to conduct the pre-competitive applied R&D necessary for profitable commercialization. A modern 'industrial commons' is needed, where R&D facilities and key manufacturing information are available to U.S. companies of all sizes, allowing them to affordably develop their products for commercial or defense needs. The DoD Manufacturing USA institutes offer an opportunity to leverage pre-competitive R&D into the manufacturing processes that underpin these future product opportunities. They include materials and manufacturing R&D; product design and development; production capacity; visibility into new markets and manufacturing workforce training and education.

"Overall, Lockheed Martin has realized a very high return on its cost-sharing investments in the institutes."

- Mr. Jeff Wilcox, Vice President for Engineering & Program Operations for Lockheed Martin

**HIGH VALUE
COLLABORATION
& FACILITY ACCESS**

- *Technology roadmapping*
- *Manufacturing pilot lines*
- *Extensive lab, testing, and prototyping equipment*
- *Industry apprenticeships*

**SUPPLY CHAIN
MULTIPLIER**

- *Collaborative environment brings in new partners*
- *Co-location with much of your supply chain*
- *Small business incubators*
- *Network with industry, academia and DoD*

**NEW CAPABILITIES AND
MARKETS**

- *Small business access to primes and vice versa*
- *Access to intellectual property*
- *Commercialize technology from federal laboratories*
- *Awareness of DoD requirements & future needs*

**INCREASED
PERFORMANCE &
RETURNS**

- *Risk reduction through pooled R&D*
- *Participate in federally cost-shared R&D projects*
- *Develop cutting edge technology*
- *Better trained workforce*

Department of Defense Manufacturing Institutes Program Office

Office of the Secretary of Defense | Under Secretary of Defense for Research & Engineering
Manufacturing Technology Program

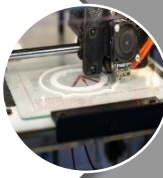
For more information visit: defenseinnovationmarketplace.dtic.mil | www.manufacturingusa.com

Or email inquires to: osd.mc-alex.ousd-atl.mbx.dod-mfg-usa@mail.mil



America Makes: National Additive Manufacturing Innovation Institute
Youngstown, OH | www.americamakes.us

America Makes strengthens U.S. capabilities in 3D printing and additive manufacturing.



MxD: Manufacturing x Digital (formerly DMDII)

Chicago, IL | dmdii.uilabs.org

DMDII leads the nation's research institute into applying cutting-edge digital technologies.



LIFT: Lightweight Innovations For Tomorrow

Detroit, MI | lift.technology

LIFT speeds development of new lightweight metal manufacturing processes.



AIM Photonics: American Institute for Manufacturing Integrated Photonics

Albany & Rochester, NY | www.aimphotonics.com

AIM Photonics accelerates development of the photonic integrated circuit industry.



NextFlex: America's Flexible Hybrid Electronics Institute

San Jose, CA | www.nextflex.us

NextFlex innovates electronic packaging & printing to produce flexible electronic products.



AFFOA: Advanced Functional Fabrics of America

Cambridge, MA | join.affoa.org

AFFOA accelerates widespread commercialization of highly functional fabrics.



BioFabUSA: Advanced Tissue Biofabrication Institute

Manchester, NH | www.armiusa.org

BioFabUSA develops next-generation techniques for cell & tissue biofabrication.



ARM: Advanced Robotics Manufacturing Institute

Pittsburgh, PA | www.arminstitute.org

ARM improves U.S. competitiveness through advancements in smart collaborative robotics.

