

A DECADE OF INNOVATION IACMI's Impact









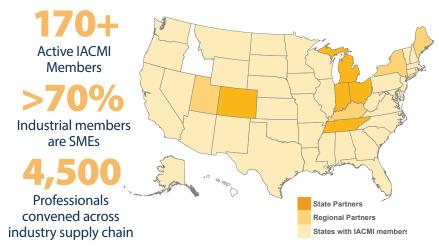








or 10 years, IACMI has implemented a formula that works. ■ Technical Innovation + Workforce Development = **Economic Growth.** IACMI has catalyzed the creation of research-at-scale, production-relevant, shared spaces for innovation and workforce development. IACMI is a Manufacturing USA institute with a 170+ member community of industry, academia, national laboratories, and government agencies





SUPPORTED BY



IACMI was established in 2015 and renewed in 2023 by the Advanced Materials & Manufacturing Technologies Office (AMMTO) in the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE).



Since 2019, IACMI has scaled up workforce programs for the U.S. Department of Defense including for the Industrial Base Analysis and Sustainment (IBAS) program within the Innovation Capability and Modernization (ICAM) office.



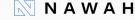
Benefits of Composites

- ✓ Enhanced Strength and Durability
- ✓ Lightweight and Stiff Performance
- ✓ Corrosion Resistance
- Aesthetics and Design Flexibility
- ✔ Versatility in Transportation, Energy, and Infrastructure

Advanced composites can make aerostructures lighter, cars safer, and bridges last longer.

Discussions through IACMI trigger thoughts, help connect and formulate relationships. IACMI helped us understand customer pain points and the need for scale.

—Kevin Retz, NAWA America



Impacting Economic Development Across the U.S.

2015

DOE invests

\$70M to set

up IACMI

2016

CoMET

opens at

NREL

\$400M Value of scale up facilities across 8 states

3,000 new manufacturing jobs announced

2023

2023

in Research & Development value

Through investments in facilities across the country, **IACMI** has catalyzed shared spaces to scale up innovation and workforce development.

Detroit

2016 2017 2019 2020 **Success Story: Infrastructure of Innovation CMSC** opens **SuRF DoD** invests **DoD invests** at Purdue \$5M in ACCP opens in

M ACE

IACMI supports 60+ R&D projects

\$29M for ACE



2020

IACMI members BASF's **Forward AM** opens AMATC at SuRF

2021



DOE invests \$30M for IACMI renewal

DoD invests \$29M for METAL

DOE awards IACMI & ORNL \$2M for novel wind turbine technology

2024

Innovation South & new IACMI headquarters open

2025





IACMI has a collaborative culture that increases the speed of innovation.

2016-2017

2017

MĪCHELMAN

2019



2019-2021

hat happens when IACMI convenes, connects, and catalyzes? Effective collaborations. Networking is the heart of IACMI's purpose, bringing together 4,500+ people through Members Meetings. Members and IACMI technical experts tackle the composites industry's toughest challenges through Working Groups focused on key sectors. Together, members forge partnerships, create new supply chains, and build an network of innovation.

IACMI has created an ecosystem where **Small Medium Enterprises (SMEs) can thrive.**

- ☑ Visibility, exposure to OEMs through projects
- Access to expertise and specialized equipment
- Help navigating the "valley of death"
- ☑ Cost-effective demonstration projects
- ☑ De-risking of new technology
- ✓ Validation of business models
- Recognition and awards

Relationships Navigating the Valley of Death Leads

De-risking Collaboration Exposure Networking

leveraging resources Partnerships **New Opportunities**

2021

2020

IACMI Working Groups

Robust model of involvement for members



High Rate Aerostructures Fabrication



Future Mobility/Vehicles Technology





Infrastructure and Construction



Recycling/Circular Economy

2024

2022

—Steve Bassetti, Michelman

to the world's largest **3D printed sculpture** and fueled investments in additive materials, databases, **BAAM**

IACMI projects in large-scale additive

software, and

laboratories.

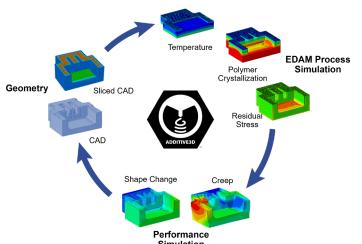
technology have led

Success Story: Additive Manufacturing of Composites and Tooling Dassault Systemes Purdue opens LSAM lab & **Thermwood and Purdue IACMI** project **ORNL 3D prints IACMI** project with Purdue begins TECHMER PM co-locates at Purdue's forms CAMS consortium licensing demonstrate LSAM at with ORNL and tooling with Purdue, Techmer, **CMSC ADDITIVE3D JEC World Local Motors Techmer material** Thermwood creates **Techmer invests to** software **AM materials** enhances expand 3D printing DASSAULT SYSTEMES database **Allegiant Stadium** materials capacity installs world's largest 3D printed sculpture

2020









■echnical innovation has been central to IACMI's mission from the beginning, including investments in diverse, scalable composites manufacturing facilities across eight states. Our current focus is leveraging these resources to drive advancements in aerospace, automotive, and infrastructure projects to make energy more affordable, reliable, and secure.

60+ Collaborative and industry-led technical projects

90+ IACMI members participating on technical projects

new products and technologies commercially available

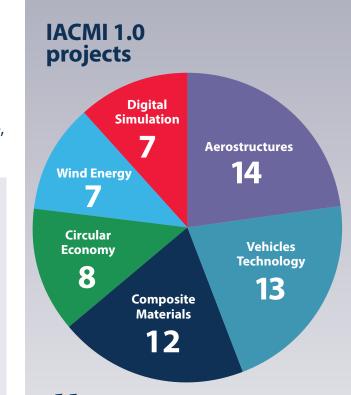
in research and \$150M in research and development value

Saving Money and Improving Resiliency with Composite

An IACMI-led project created a compression molded composite liftgate for the Volkswagen Atlas, reducing weight by 35% and cost by 9%. Across 1.0 projects, IACMI achieved ways to reduce production costs of composites by 25% and 50% lower costs are projected in 2.0 projects.



2020-2022



IACMI's SuRF facility gave us access to equipment and tooling we would never have been able to afford on our own.

—Andrew Maxey, Vartega



2025

Manufacturing

IACMI automotive projects led to commercialized products and technologies used in Ford, Volkswagen, and Hundai vehicles.

IACMI launches project with **Ford & Dow**



2015

Ford & Dow qualify and use **Vorafuse CF** composites in **Ford vehicles**

2016-2019

IACMI/INEOS project develops carbon fiber/vinyl ester prepregs

2017

Success Story: Production of Composite Parts for Vehicles

IACMI, VW and IDI **SMC liftgate**



develop lightweight

2017-2019



2018



Volkswagen **Innovation Hub Knoxville co-locates** at UTK's Innovation North

2020



2020

IDI Composites

commercializes

Alluralite &

Fortium SMC

materials

Volkswagen **Innovation Hub** supports improving paintability of SMC parts for Bentley and Lamborghini

Hyundai uses IDI's Fortium[™] in Santa Cruz truck bed

2021

Volkswagen Commercial Vehicles releases ID **Buzz EV with composite** liftgate for US Market



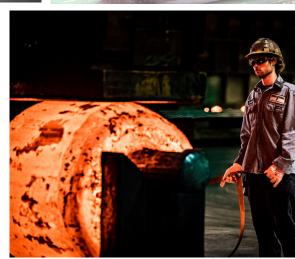








2016



ACMI's WD programs build a robust talent pipeline from "K to gray" for U.S. advanced manufacturing. Through STEM events, workshops, online courses, and hands-on training, IACMI inspires and educates students about advanced careers in composites (ACCP), CNC machining (ACE), and casting & forging (METAL). We're preparing and connecting next generation machinists and engineers to further education, internships, apprenticeships, and rewarding careers.

AmericasCuttingEdge.org

MetalforAmerica.org

I sought to get everything I could out of my internships, and I feel I'm a strong example of those efforts paying off.

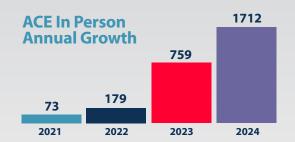
> ---Will Henken, Volkswagen **VOLKSWAGEN**

IACMI- America's Cutting Edge Training Facilities

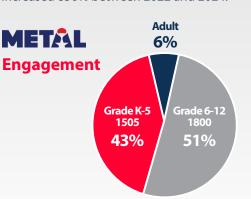




12,000+ trained in 50 states in CNC, metrology, composites or cybersecurity.



Yearly ACE in-person participation has increased 856% between 2022 and 2024.



5100+ Hands-on advanced manufacturing training

18,300+ Students engaged in STEM Outreach

Success Story: K-Gray Training in Advanced Manufacturing

Online training in all 50 states 12,400

Internships with industry collaboration

Through internships, workshops, outreach engagements, and hands-on training, IACMI has created a pipeline of talent from K to Gray for advanced manufacturing.



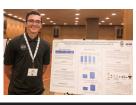
Composites One Internship workshops begin program 1.0 begins



2017

\$5M MEEP award for **ACCP**

2019



UT Professor Tony Schmitz launches IACMI-ACE online training

2020



2021

SkillCrafters ACE testbed 1400+ for at UTK for grades 6-12 hands-on

2023



2023

METAL launches bootcamps, workshops, outreach, & apprenticeships

2024



2024

Internship program 2.0 begins



2025

InnoCrate pilot, 2000+ K-12 1000+ trained in composites through ACCP









ACMI has helped members leverage resources in two ways. The first is empowering them with access to equipment, facilities, and expertise they would not otherwise have. The second is through enabling companies and universities to secure additional funding, building on innovations and resources facilitated by IACMI. Early investments from the Department of Energy paved the way for the Department of Defense to establish critical, scalable training programs in CNC machining, casting, forging, and of course, composites.

IACMI is a vital asset for any company looking to grow their business needs in composites.

— Dale Leftwich, JR Automation

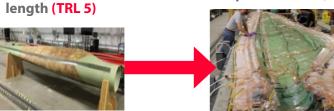


Catalyzing Additional Funding

IACMI Member Recipients	Source of Funding	Amount (\$M)
Workforce Development (ACCP + ACE + METAL)	DoD	69
R&D \$ for universities (Purdue + UTK + UDRI)	NSF, CERN, DOE, DoD	53
R&D \$ for federal labs (ORNL + NREL)	DOE	36
Investment in new manufacturing facilities	TPI	25
Investments in startups and SMEs	Innovation Crossroads, Diamond Edge Ventures	17
R&D \$ for industry (Ford + GM + SuRF)	DOE	15
Total		\$215M

IACMI projects have accelerated the Technology Readiness Levels (TRLs) in wind blade manufacturing.

2019 2018 2016 **Success Story: Manufacturing of Recyclable Thermoplastic Wind Turbine Blades NREL demonstrates NREL fabricates 13-meter NREL completes validation testing** technology at 9-meter thermoplastic blade (TRL 6) of 13-meter blade (TRL 7)





LM Wind Power scales thermoplastic blade technology to 62 meters (TRL 8) ARKEMA

2022







A Network of Innovation

lacmi.org









































































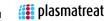


















































































































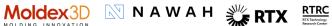


































FORVIA





























JAMES CROPPER

CHOMARAT













































