



# IACMI IMPACT IN INDIANA

UPDATED 12/13/18

## INDIANA MEMBERS

### Indiana Advanced Manufacturing Sector

- > 50+ Indiana companies contributing to sector
- > 25% of Indiana economic output based in manufacturing
- > **1 in 5 Hoosiers go to work in advanced manufacturing**
- > \$36.6B in manufactured good exports (2017)
- > 93,000+ manufacturing jobs since 2009
- > Leading the U.S. in manufacturing job growth

Source: Indiana Economic Development Corporation



**EVONIK** was ranked among the **top automotive suppliers** in 2018. Evonik was nominated for the AutomotiveINNOVATION Award for its PulPres™, a process to produce continuous fiber-reinforced profiles used in bumpers, crash bars, & chassis components.



**THERMWOOD** installed the **world's largest composite 3D printer**, the LSAM 10'X40', at Local Motors.

## WORKFORCE DEVELOPMENT IMPACT

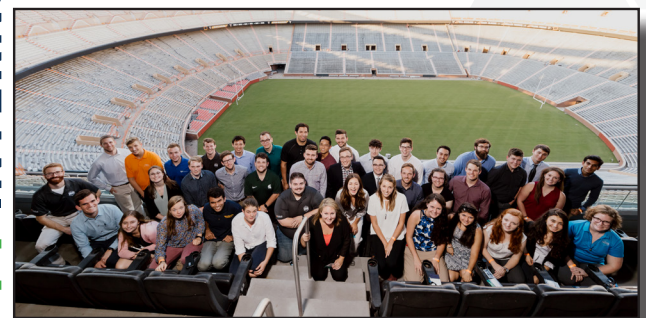
**100** Internship appointments since program launch

**38% FEMALE INTERNS IN 2018 CLASS** more than double the national average of women in engineering

\*National Science Board: Science & Engineering Indicators 2018

## 4 INDIANA-BASED PLACEMENTS

44 INTERNS



"This internship incorporates government, industry, and academia all into one opportunity. Any other internship you apply for, you're not going to get that."

– **Jessica Lavorata, 2017 IACMI Intern, 2018 Purdue Graduate Student**



**DASSAULT SYSTEMES INTERNS:** Annually hosted 6 half-year modeling and simulation co-ops through partnership with Purdue University





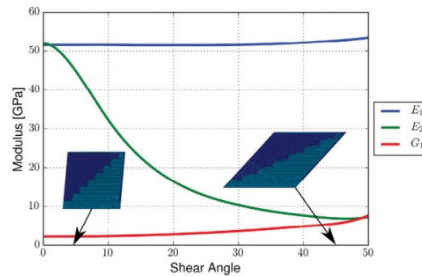
INDIANA ASSETS AND INNOVATIONS THROUGH IACMI



DuPont's Rapid Fabric Formation technology deploying Fibrflex at high shear angles.

Validation of new carbon fiber manufacturing process

In May 2018, the IACMI project team of DuPont, Fibrtec, and Purdue University completed the first phase of an IACMI project to create a new carbon fiber composite manufacturing process that would provide better fabric formability characteristics.



"The impact on mechanical properties is shown as the RFF undergoes shearing, something that can be predicted with simulation and directly applied to part performance prediction and design." - Digital Engineering

"With improved composite simulation, engineers can successfully complete more designs with less need for physical

model trials. This can **accelerate time to market and reduce overall costs to produce** a new design or part."

- Digital Engineering Sept. 2018, referring to the importance of Purdue University simulation capabilities as part of IACMI projects



About the Indiana Manufacturing Institute (IMI) at Purdue University

- > Facilitates collaboration between academia and growing composites industry in Indiana
- > 62,000-square-foot institute in Purdue Research Park
- > Home to the Composites Manufacturing Simulation Center (CMSC)
- > Leads research for industries including aerospace, aviation, automotive, energy, and sporting equipment

**NATIONAL EXPOSURE THROUGH IACMI:** IACMI MEMBERS MEETING, CAMX PRESENTATIONS, NATIONAL MEDIA COVERAGE AS SEEN IN:

YAHOO! **Harvard Business Review** **Forbes Inc.**

**30+ IACMI R&D PROJECTS IN PROCESS**



The Indiana Manufacturing Institute (IMI) at Purdue University, home to the Composite Manufacturing Simulation Center (CMSC).

Extrusion Deposition Additive Manufacturing Conference

In Sept. 2018, Purdue's Composite Manufacturing Simulation Center (CMSC) hosted **60+ attendees** for a conference centered on extrusion deposition for additive manufacturing. Attendees represented companies including **NASA, Lockheed Martin, Local Motors, and Dassault Systèmes.**