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**LIFT Joins Youngstown State University Research Foundation in
Developing Advanced Manufacturing “Teaching Factory”**

*Development of the Mahoning Valley Innovation & Commercialization Center (MVICC) Will
Help Prepare Workers to Use Evolving State-of-the-Art Manufacturing Technologies*

YOUNGSTOWN, Ohio – As manufacturing becomes increasingly advanced, the industry will need workers with more technical skills to work on and operate the high-tech equipment the manufacturing industry is using today and that will be developed in the future.

For Ohio manufacturers to meet this growing need, LIFT – Lightweight Innovations For Tomorrow – has joined a partnership among Mahoning Valley manufacturers, educators at all levels, and workforce developers, led by Youngstown State University Research Foundation (YSURF), to develop the Mahoning Valley Innovation & Commercialization Center (MVICC). This public-private partnership will create an educational and entrepreneurial hub to share facilities, equipment, and instructors – all necessary to build the educated and skilled manufacturing workforce for the region.

The MVICC will serve as the first of its kind for the manufacturing industry, creating a “Teaching Factory” by replicating the concept of teaching hospitals across the U.S. The Teaching Factory will use shared equipment, facilities and training, all focused on the greater purpose of creating and shaping the talent of tomorrow and further developing incumbent workers today.

Students engaged in the program will earn stackable, portable credentials which can culminate in a certificate or degree. They will also have the option to gain full-time employment with one of the many industry partners.

“The ‘Teaching Factory’ concept has proven successful in preparing workers to excel in other advanced fields, and it is time to bring that model to

manufacturing,” said Michael Hripko, president, Youngstown State University Research Foundation, and associate vice president for research, Youngstown State University. “There are manufacturing innovations in materials, equipment and processes happening every day around the country. The Innovation & Commercialization Center will ensure our Ohio workers are prepared to work and succeed on the job from day one.”

The MVICC program will consist of a wide array of manufacturing assets and subjects, including: a shared laboratory for hands-on experience and real-world application, industry-standard equipment, STEM education, electronics, robotics, welding, machining, industrial maintenance, mechatronics, additive manufacturing, advanced materials and lightweight metals.

LIFT, one of the founding [Manufacturing USA](#) institutes, and a part of the National Network of Manufacturing Innovation program, is a Detroit-based public-private partnership dedicated to developing and deploying advanced lightweight metal manufacturing technologies, and implementing education and training programs to better prepare the workforce today and in the future.

“The way we teach our workers must keep up with the speed at which our manufacturing industry is innovating,” said Emily DeRocco, director, education and workforce development, LIFT. “Replicating the teaching hospital model in modern manufacturing has the potential to address a challenge that plagues educators and manufacturers across the country: how to ensure students have firsthand access to new and emerging technologies in order to learn the skills necessary to be successful in advanced manufacturing jobs.”

Other MVICC partners include: Youngstown State University, Eastern Gateway Community College, Choffin Career & Technical Center, Columbiana County Career & Technical Center, Mahoning County Career & Technical Center, Trumbull Career & Technical Center, STEM Academy, Youngstown City Schools, City of Youngstown, and Youngstown Business Incubator.

ABOUT YOUNGSTOWN STATE UNIVERSITY RESEARCH FOUNDATION

The Youngstown State University Research Foundation (YSURF) provides research support services for, and works in collaboration with Youngstown State University. YSURF serves as entry point for business and industry engagement with Youngstown State University.

ABOUT LIFT

LIFT is a Detroit-based, public-private partnership committed to the development and deployment of advanced lightweight metal manufacturing technologies, and implementing education and training initiatives to better prepare the workforce today and in the future. LIFT is one of the founding institutes of Manufacturing USA, and is funded in part by the Department of Defense with management through the Office of Naval Research. Visit www.lift.technology or follow on Twitter [@NewsFromLIFT](https://twitter.com/NewsFromLIFT) to learn more.

BUILDING 21ST CENTURY MANUFACTURING TALENT

Teaching Factory: Building a sustainable model for collaborative education in STEM technologies

An Education & Workforce Development Initiative for
LIFT...Lightweight Innovations for Tomorrow



THE PROBLEM

Hands-on training grows more important each day for manufacturing workers. Not only do companies need highly skilled and trained individuals but also the equipment necessary for training has become complex and expensive enough that many educational institutions cannot house equipment at their facilities. Stand-alone and separate institutions, while they have the technical expertise to teach the workforce, cannot purchase all of the equipment necessary for training. Without access to the proper materials and machinery, students are not as prepared for the world of work in manufacturing and employers are less able to find the workers they need. Companies and educational institutions across the nation face this problem.

ABOUT THE PROJECT

Students engaged in the program will:

1. Earn stackable, portable, credentials that can culminate in a certificate or a degree
2. Have the opportunity to gain full-time employment at one of the many manufacturers in the collaboration

THE SOLUTION

To address this growing problem for educators and manufacturers across the country, Youngstown State University Research Foundation is leading the development of the Mahoning Valley Innovation & Commercialization Center, (MVICC), a collaborative infrastructure for training workers on technical equipment. This model will serve as the first of its kind in manufacturing, creating the "Teaching Factory" by replicating the concept of teaching hospitals across the U.S. The Teaching Factory will use shared equipment, facilities, and training, all focused on the greater purpose of creating the talent of tomorrow and further developing incumbent workers today. MVICC will serve as a hub to connect students to cutting-edge equipment and training. Partners from all levels of education will collaborate and combine assets to create a "living career pathway." Partners include:

- Universities
- Community Colleges
- Career and Technical Centers
- High School STEM Academies

MVICC program features will include:



Shared laboratory for
hands-on experience and
real-world application



Electronics



Machining



Additive
manufacturing



Industry-standard
equipment



Robotics



Industrial
maintenance



Advanced materials



STEM education



Welding



Mechatronics



Lightweight metals

Sustainable and Replicable Model

MVICC's structure of collaboration is sustainable as new assets will be shared among partners to ensure that as many students as possible have access. Many institutions receive one-time investments of capital for equipment investment but the funding is not sustained as technology changes. By sharing equipment, more organizations can fully utilize equipment and help to alleviate the issue of long-term funding for technology advancement.

MVICC will also be adopting a Teaching Factory model, similar to that of a teaching hospital. Students are able to get hands-on experience while customers are being served. Students at MVICC will create products to generate revenue that offsets their cost of training.

Partners will engage the Ohio Department of Higher Education to identify other collaborative bodies that may be working on a similar concept. The group will also collaborate with the Ohio Federal Research Network to ensure that the training programs created fill the needs of NASA and the Air Force Research Laboratory. This scalable and proven model can be replicated by other national manufacturing innovation institutes and manufacturing collaborations across the nation.

PROJECT LEAD

Youngstown State University Research Foundation

Mahoning Valley Manufacturers Coalition - Representing more than 50 of the region's most influential manufacturers

PARTNERS

Eastern Gateway Community College

Choffin Career & Technical Center

Columbiana County Career & Technical Center

Mahoning County Career & Technical Center

Trumbull Career & Technical Center

STEM Academy

Youngstown City Schools

City of Youngstown

Youngstown Business Incubator

Youngstown State University

ALIGNMENT TO LIFT STRATEGIC FOCUS AREAS



Linking and leveraging resources and related initiatives on the ground today



Ensuring students gain STEM foundational skills for success in manufacturing careers



Creating enhancements to engineering curriculum using lightweighting technologies



Attracting more young people to manufacturing careers



Attracting more young people to manufacturing careers