



BUILDING 21ST CENTURY MANUFACTURING TALENT

LIFT Learning Lab Internship Pathway Development – Phase 1

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



THE PROBLEM

A major skills gap exists across the country and in the state of Michigan for a wide range of advanced manufacturing disciplines including lightweighting manufacturing. For many post-secondary students, there are few work-and-learn opportunities to provide the hands-on experience and exposure to advanced manufacturing which will help them progress in their education and, later, in their careers.

Internships and other work-and-learn experiences better prepare students for engineering careers in in-demand fields, including lightweighting, particularly in Michigan.

While Michigan is home to the highest concentration of manufacturing and industrial engineers in the country, the demand for more talent is still high and expected to grow. For example, there are currently 1,300 materials engineers in Michigan with demand expected to grow by nearly 10 percent by 2024.

THE SOLUTION

LIFT is launching an internship program pathway for undergraduate and graduate students to provide them with the opportunity to gain exposure to lightweight manufacturing technologies and get hands-on experience in the industry. The internship experience will be built around projects that support the education of the students in the areas of interest to LIFT members.

The LIFT internship program includes three levels of internships that will allow students to take on progressively complex tasks and develop specific knowledge and expertise in LIFT’s technology pillars.

All three levels will be designed in coordination with academic partners to ensure that learning outcomes are defined and measured and that students are engaged in projects aligned with their academic work to provide a pathway to a career in lightweight metals manufacturing.

LIFT Internship Levels

LEVEL 3 INTERNS	LEVEL 2 INTERNS	LEVEL 1 INTERNS
Undergraduate Juniors	Undergraduate Seniors	First Year Graduate Student or Recent BS Graduate

ABOUT THE PROJECT

LIFT has contracted with the Oak Ridge Associated Universities (ORAU) to design and administer the internship program during Phase I.



ORAU is a 121-member nonprofit university consortium which brings together university faculty and students to collaborate on major scientific initiatives that help keep America on the leading edge of science and technology.

LIFT and ORAU will also work in collaboration with Wayne State University (WSU) and the University of Michigan (U of M) to recruit students, develop learning outcomes, and align the internship with academic programs of study at each respective institution.

In future phases, recruitment will be opened to additional partnering LIFT universities.



DELIVERABLES

Phase I of the LIFT Internship Pathway program will establish a program model that can be replicated beyond the initial pilot phase to cultivate a pipeline of engineering talent for the lightweight industry. Specific outcomes will include:



Program development including a standard logic model that includes defining program inputs (resources dedicated to the program), activities (what the program does with the inputs to fulfill the mission), outputs (the direct products of the activities), and outcomes (learning and programmatic).



Two students completing Level 3 internships



Three students completing Level 2 internships

PROJECT PARTNERS



Lightweight Innovations for Tomorrow (LIFT)



Oakridge Association of Universities (ORAU)



Wayne State University



University of Michigan

ALIGNMENT TO STRATEGIC FOCUS AREAS



Attracting students and workers to educational pathways and careers in manufacturing



Ensuring students gain STEM foundational skills for success in manufacturing



Expanding work-and-learn opportunities