

# Advancing DRIVE AM – Keck Center at UTEP



## PROBLEM

To assure the viability and recognition of additive manufacturing (AM) in the defense industry, soldiers, technicians, engineers, and other DoD leadership roles must be exposed to current, state-of-the-art, educational programs that incorporate fundamentals through the authority-level curriculum. Continued work is needed to build on the previous efforts of the DRIVE AM project via the W.M. Keck Center at the University of Texas at El Paso (UTEP).

## OBJECTIVE

The project seeks to drive research, innovation, and value through education in AM. The objectives of the effort are to 1) insert the DRIVE AM foundation program throughout DoD and expand virtual content; 2) focus on completing the DRIVE AM specialty program, enrolling participants, and providing offerings; 3) develop awareness throughout DoD on UTEP's unique approach in using a specific laser powder bed fusion (LPBF) qualification test artifact for deepening understanding throughout the LPBF workflow to benefit DoD; 4) advance the DRIVE 3D STEM K-PhD pipeline and economic development initiatives, and 5) leverage the DRIVE AM program to expand into the high priority needs for understanding and training in AM of alloys relevant in future high-velocity applications.



**AMERICA MAKES  
TECHNOLOGY  
DEVELOPMENT  
ROADMAP**

This project aligns to:



VALUE CHAIN

**ASTM PROCESS  
CATEGORY**  
Material Extrusion  
Powder Bed Fusion

**EQUIPMENT**  
All-In-One Multi<sup>3D</sup>,  
Pinnacle PXS-225/70  
X-ray CT

**MATERIAL**  
Mo and Nb  
High-Performance  
Refractory Alloys

## TECHNICAL APPROACH

The project team of America Makes and UTEP is working to expand offerings to develop and deliver while using the Analysis, Design, Development, Implementation, and Evaluation (ADDIE) lifecycle model. This starts with an analysis (largely informed by customer discovery) of the needs for DRIVE AM training and the participant's experience level, critical knowledge gaps, scheduling, and other constraints. To increase engagement and impact, the Knowledge and Best Practices Teams are embarking on a multi-location onsite roadshow performing marketing lectures at DoD locations as restrictions allow. UTEP is continuing the K-PhD and outreach efforts initiated during the DRIVE AM program. The project team is actively researching literature to understand activities promoting STEM recruitment and incorporating those findings within their courses. At least three courses are being developed, one each for elementary, middle, and high school-aged students.

## PROJECT START DATE

July 2021

## EXPECTED END DATE

December 2023

## EXPECTED DELIVERABLES

- Training impact report
- Regional intervention report
- Long-term DRIVE AM Strategy/Operation Concept
- K-PhD outreach courses
- Final report

## FUNDING

**\$10,605,052 total project budget**  
(\$10,605,052 public funding)

## PROJECT PARTICIPANTS

### Project Principal:

University of Texas at El Paso (UTEP)

### Project Participants:

America Makes

### Public Participant:

U.S. Department of Defense