



Problem

- Tooling cost and lead times need to be through improvements in the additive manufacturing of tooling for metal mold process parts

Objectives

- Design and build tools for metal mold parts using advanced thermal management techniques
- Identify and build tools using high thermal conductive materials
- Develop guidelines for cooling design, materials, and rapid production of tooling

Benefits to Warfighter

- Improved quality and performance of die cast parts
- Reduced production time and tooling costs
- Extended die life

Description of Project:

Reducing tooling cost and lead time to improve the quality and time to production of die cast parts.

Team:

 **Worcester Polytechnic Institute**


NORTH AMERICAN DIE CASTING ASSOCIATION

 **MERCURY**


RYOBI


UCI
University of California, Irvine

Milestones / Deliverables

1. Identify tools, for rapid production.
2. Simulate heat transfer using MagmaSoft
3. Select alloy and additive manufacturing process
4. Build tooling using additive manufacturing
5. Conduct in-plant trials in production
6. Create guidelines for cooling design, materials, and rapid production of tooling using additive manufacturing techniques