**Project Title:** Dual Spare Tire Carrier System for On/Off-road Tractor Application

**Area:** Mechanical Engineering

**Sponsored By:** Navistar Defense LLC.

Navistar Defense is in need of a low cost and highly reliable Dual Spare Tire Carrier System that will meet performance requirements (technical, cost) and can be installed on heavy tractor applications. This system would need to stow at least two spare tires located at the back of the cab. It is also required to meet or exceed multiple design constraints due to various customer requirements (trailer swing clearance, trailer connections, tire size, etc.). The design must be operated by a single individual in a timely manner by utilizing electrical (12V) or mechanical assisted components. The system should be designed for manufacturability (DFM), ready for mass production, and so that it can be installed on multiple tractor configurations. Navistar Defense is requesting detailed design, and a physical prototype, test and validation data. Target date for completing the prototype installation is by the May 2013.

The final proposed spare tire system is intended to be utilized on various military vehicles being sold through Navistar Defense. This includes a possible sale of 60 heavy equipment tractors going to Israel.

Navistar Defense will cover the costs for the material and labor associated with the fabrication of the prototype design, once approved through a final design review (FDR). Navistar Defense will also provide a vehicle for fit-up activity at one of their facilities for First Article Inspection (FAI) where final prove-out and functional validation will occur.

**Requires:** 3 - 4 ME students