Self-Presenting Secondary Hood Latch System

Overview
Currently, most hood latch systems require the user to blindly search for the secondary disengagement lever. Our objective was to create a more intuitive and easily accessible hood latch system. The design needed to be purely mechanical and function in the existing GM hood latch housing. Most design challenges stemmed from the kinematics of the secondary disengagement lever.

Objectives
- Design a more intuitive and easily accessible hood latch system
- Construct a functioning prototype of the design

Approach
- Keeping constant contact with our sponsor, we clearly defined our project objectives from the start.
- Customer needs are an important part of any design. We made sure to understand what the users of our product wanted.
- Once we defined the problem and researched customer needs, we defined the target specifications with quantified engineering values
- We also conducted patent research to learn what other designs were currently available in the market.
- Once the preliminary research was completed, we started brainstorming possible solutions.
- We worked most of our ideas out on CAD, brainstorming a couple different preliminary designs.
- We spent a lot of time analyzing the CAD kinematics to make sure there were no physical conflicts.
- We modified our designs in CAD based on our kinematic analysis.
- We conducted prototype I construction and performed prototype testing and analysis.
- Multiple iterations of the prototype construction process were completed to achieve final prototype functionality.

Outcomes
- GM will be able to incorporate this design across their entire fleet of vehicles.
- An entirely unique design in the market means all team members will receive a design patent. (GM owned)
- Our integrated design does not significantly add to cost or to production time.