

**Project Title:** [Pump-Nozzle Interface](#)  
**Team Members:** Caitlin Crowley  
David Overy  
Camden Reece  
**Faculty Advisor:** Dr. Mueller  
**Area:** [Mechanical Engineering](#)  
**Sponsor:** [Tuthill Transfer Systems Fort Wayne](#)

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Tuthill Transfer systems of Fort Wayne, Indiana is an industry leader in fuel pump engineering and manufacturing. Tuthill's fuel pumps feature a diverse range of applications from agriculture to energy. The Fill-Rite line of fuel pumps manufactured by Tuthill have used the same nozzle interface design for the past 30 years, and they are looking for help designing a new system.

The term "nozzle interface" describes the method in which the nozzle, used to pump the fuel, is attached to the actual pump when not in use. The customers are not always using the current nozzle interface because some find it to be inconvenient or uncomfortable to use. The nozzle does not always stay attached to the pump when the user stores it incorrectly, and the current design has the potential to allow fuel to spill out of the nozzle while it is stored. The new nozzle interface needs to be capable of securely storing all three nozzle sizes to the pump. The pump must be shut off via a switch when the nozzle is placed into the new apparatus.

The design and development of the nozzle interface has been given a budget of \$3,500. This budget will be used to cover all prototyping and development costs associated with the project.