

## Appendix I: Senior Design Project Abstract

### *Multifunctional Car Vacuum Cleaner*

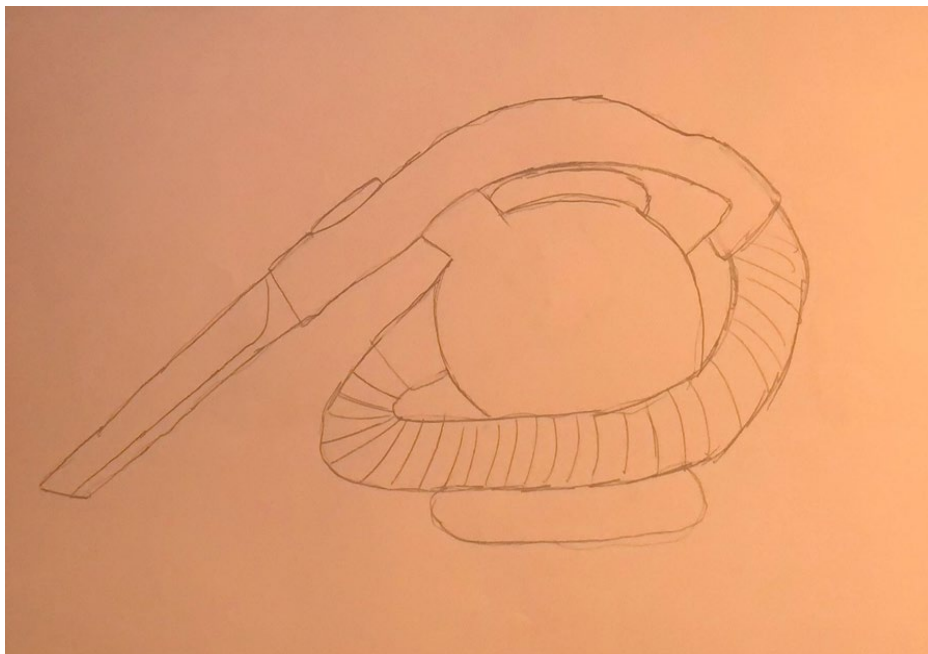
#### **Product Description:**

A multifunctional vacuum cleaner for cleaning hard-to-reach debris on car interior surfaces.

#### **Abstract: (less than 350 words)**

The car vacuum cleaner should be easy to use and quick to clean up. It can clean any wet or dry messes, even liquids, cigarette ashes or pet hair. The vacuum cleaner ensures you can reach all the nooks and crannies of your car. The car vacuum at least includes an all-purpose nozzle, a protective lid, a trash container, and a filter. The nozzle is used to connect cleaning kits for different car surfaces. The transparent trash container makes it easy to empty it and the protective lid always keeps the trash inside. The filter attracts and captures airborne particles or allergens.

The handheld vacuum cleaner weights less than 5 lbs. The motor used in the cleaner should be powerful to generate enough cyclone and suction to clean any hard-to-reach debris in the car. The prototype budget shall not exceed \$400 USD.



**Deliverables:**

The project design groups will be expected to deliver the mechanical system that address the above requirements described above and meets the following criteria:

Safety: Design shall not introduce or expose the operator to any hazards more than the current process.

Ergonomics: Using the tool shall not induce fatigue more than the current process

Durability: Solution must be capable of being operated for a minimum of 2 years before requiring maintenance or servicing.

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