**Objective**

Construction of an Unmanned Underwater Vehicle (UUV) that is capable of autonomous navigation and garbage collection in a body of water.

**Item List**

Tube Structure

-1/2 inch PVC pipes for the frame

Main Module

Two Large Tubes

4 motors and ESCs

http://www.ebay.com/itm/2212-920KV-CW-CCW-Motor-for-DJI-Phantom-30A-Simonk-Brushless-ESC-4Pcs-/111842854427?hash=item1a0a5a861b:g:gsIAAOSwOdpXxkg~

Gyroscope

Camera

Flash Light

SONAR/Waterproof Ultrasonic sensor (may not need)

Transceiver (optional)

Sealing material

**Subsystems**

Navigation

* Able to move and turn in the water using its propulsion

Attitude Dynamics and Control

* Stabilizing of the UUV using gyroscope inputs

Obstacle Detection and Avoidance

* Use of SONAR or camera input to go around obstacle

Garbage Detection and Collection

* Detection of garbage, navigation and collection
* Use camera input to detect using OpenCV, navigate using motors, collect using trash grabber

Communication (optional)

**Design**

