North Star Academy, Basis School, Roy Cloud School: Redwood City, California

**Intro**

We designed specialized tools to complete the mission by adapting pump motors with toy propellers. We used car rear view cameras on our ROV to practice driving. This helped us see underwater so we could gather data and measure the keel of an iceberg. We used a hamster cage for the skeleton and a servo for toy sailboats to control the claw, which is also a toy.

**Mission Theme**

The 21 Century conditions of oceans and society is in danger because the ocean environments are being ruined by human ignorance and neglect. Ocean observing systems and data provided will assist in challenges so we can design tools to improve and protect conditions. The ability to fix underwater pipes more efficiently is needed.

**Most Rewarding part of this experience:**

-We learned Engineering skills and took on real challenges.

-The greatest lesson learned from this experience was using underwater cameras and waterproofing.

-Next time, we will design better underwater cameras and more of them for a 360 degree view.

**ROV Design**

Our ROV has a metal skeleton so it is buoyancy neutral and faster. We have a claw controlled by a servomotor to fix the underwater pipes faster. We have two waterproofed cameras for good viewing.

**Safety**

We made sure that the ROV was powered off when we made changes and worked on it. We also wore sunglasses to protect our eyes when needed. We wore appropriate shoes when testing near the pool. Our members had good ideas to wrap the tether so we don’t trip.

Mission Specifications

[http://www.marinetech.org/files/marine/files/ROV%20Competition/2015%20files/2015%20Competition\_Mission\_Spec%20briefing\_FINAL.pdf](http://www.marinetech.org/files/marine/files/ROV%20Competition/2015%20files/2015%20Competition_Mission_Spec%20briefing_FINAL.pdf" \t "_blank)

Competition manual

[http://www.marinetech.org/files/marine/files/ROV%20Competition/2015%20files/NAVIGATOR\_MANUAL\_v5\_cover.pdf](http://www.marinetech.org/files/marine/files/ROV%20Competition/2015%20files/NAVIGATOR_MANUAL_v5_cover.pdf" \t "_blank)