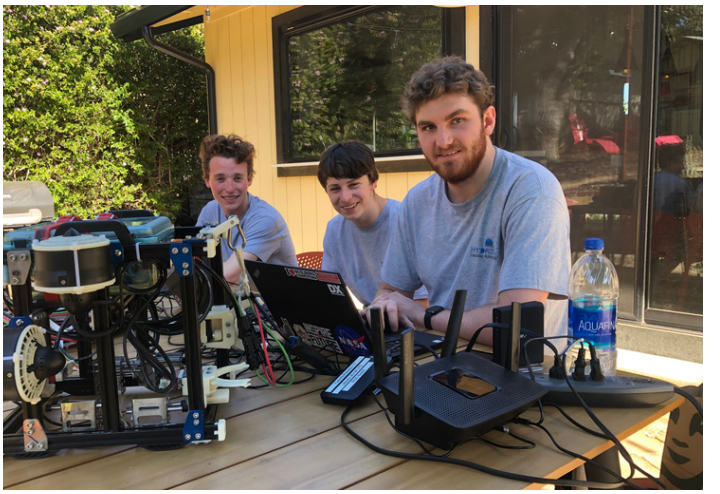
CABRILLO COLLEGE, APTOS, CA, IN USA
REQUIRED TRAVEL FOR WORLD CHAMPIONSHIP: 363 MILES
NEW MATE ROV 2022 TEAM
-Cabrillo Robotics Club-

About Us:

We are a group of student leaders who have built ROV Hydrozoa for the MATE ROV 2022 competition. We are excited to to demonstrate this new robot that we have built from scratch. We take pride in our MATE ROV as we have dedicated lots of time, care and research to build a robot that will successfully complete the tasks given for the competition.

JUNE 23 – JUNE 25 2022

R&D Team Left to Right: Isaac Wax (Safety Officer, Design/Mechanical, Tether), Michael Vollmer (SW), Ciaran Farley (CEO, pilot, SW/Electrical, senior), Lhea Aragon(Admin/Props), Mike Matera(Club Advisor). Not pictured Spencer Koontz (co-CFO, Mechanical, Props, Tether), Stephanie L'Heureux (co-CFO, SW, Admin), Kevin Avalos (Admin/Props), Carter Frost (Advisor)



R&D Team Left to Right:
Spencer Koontz (co-CFO, Props Engineering Manager)
Isaac Wax (Safety Officer, Design/Mechanical Engineering Manager)
Ciaran Farley (CEO, Engineering Program Manager, pilot)
Team members range from freshman to senior level in college.

Overview:

Our robot design prioritized modularity, budget, consistent buoyancy, and ease of use. We used 20x20 t-slot aluminum extrusion. All manufactured aluminum parts are made from grade 6061 aluminum and anodized to prevent galvanic corrosion.

Features:

- Simple yet elegant design with intelligent software system designed using ROS.
- Robust cable and tether management system designed for rough water or deep water.
- ROV provides crew with data feeds and camera feeds.
- Optimized to perform tasks in the areas of marine renewable energy.
- Pressure proof gearbox housing electrical components with heat sinks.
- Logitech USB cameras.
- Grippers with jaws that are driven 20kg servos with a 6kg clamping force.

Important Safety Features:

- Tether equipped with master fuse and strain relief webbing.
- Custom 3D printed shrouds that meet IP20 standards, blocking objects larger than 12.5 mm, only reducing water flow by 15%.
- Software provides pilot with check on system in advance of the launch in the water.

Total Costs: $3,000.69
Total Hours: 400
Fits in a 65cm sphere, Weight: 9.2kg