



**NORTH BROWARD
PREPARATORY SCHOOL**
A NORD ANGLIA EDUCATION SCHOOL



Ranger Class

Meet The Team (see chart for names and roles)

Team Members (left to right)	Grade	Title	New/Returning	Career Goal
Ava Cannold	9	Chief Operations Officer	New	Civil Lawyer
Lena Kalandjian	9	Electronics Assembly/Soldering	Returning	Pediatrician
Bobbi-Jo Suppelsa	9	Chief Executive Officer	Returning	Biomedical Engineer
Kylee Vest	9	General Robot Assembly	Returning	Marine Biologist
Madison McEwen	11	Chief Financing Officer/Software Programming	New	Biomedical Engineer

Team Mentors (left to right)	Position	New/Returning
Steven Crow	High School Instructor	Returning
Tony Suppelsa	Motorola Solutions Foundations Sponsor	Returning

Team Information:

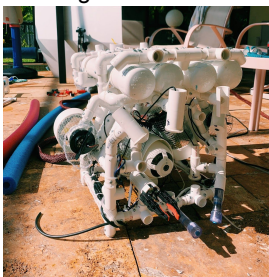
- Company Name: H2Obots
- First Middle School Team in 2018
- Retraining: Second Year participating in MATE Robotics
 - Competed at FAU regionals, 2018
 - Invited to compete in Kingsport, Tennessee regional competition
- School: North Broward Preparatory School
- Location: 7600 Lyons Road, Coconut Creek, FL 33073
- Distance Traveled: 9.5 miles

Company Theme:

- Girls Advancement in Science, Technology, Engineering, Arts and Math (STEAM)

ROV Specifications:

- Estimated Total Cost: \$1408 (100% Donated)
- **Dimensions:** 31 cm x 38 cm x 47 cm
- **Total Weight:** 15.40 kg
- Tether Length ~ 10 Meters
- Primary Material: PVC
- Total Student Hours: 160 Hours spent building/designing
- 16 hours spent practicing



New Vs Used:

- Reused frame design from last year -- everything else *new*

System Design Features:

- MATE Triggerfish Kit
- Interchangeable positioning mechanical claw
- Multi-view camera setup
- 4 Thrusters: 2 Vertical, 2 Horizontal
- Mini-Rov - 1 Camera, 1 Motor, 3D printed with flashlight at tip
- 5 Wide Area Cameras
- 2 Sabertooth 2X5 Motor Controllers
- 2 Sets Bags used for lifting function
- Electromagnets to hold Mini-Sub
- PVC Tubing Frame and Fittings
- Max Fuse Size = 25A (20A * 150% = 30A -- FULL LOAD) - 25A inline fuse to operate functions at separate times

Safety Features:

- On/Off Switch on Control Box
- No Exposed Wires
- Two in line fuses; One on the power supply and the other in the control box
- Separate Fuse (3A) for cameras
- GFI breaker for power source (MATE kit - yellow plug)
- Strain relief on control box and on ROV
- Propeller cages (Shrouds)
- Safety Procedures/Checklist Created

Built vs Bought:

- **Built**
 - All 3D-printed components (reel, mini-sub & holder, fish drop, propeller guards)
- **Bought**
 - Triggerfish kit from MATE
 - Building materials
 - PVC frame
 - Magnets (Amazon)
 - PVC Pipe and Fitting