## SeaHawk II

## **Cabrillo Robotics Club**

6500 Soquel Dr, Aptos, CA 95003

Stephanie L'Heureux	CEO, Software Engineer, Graphic Designer, Copilot			
Liam Gilligan	CFO, Software Lead			
Isaac Wax	Safety Officer, Hardware Lead, Mechanical/Electrical Engineer			
Rowan Garties	Secretary, Mechanical Engineer			
Isaac Eda	Mechanical/Electrical Engineer, Pilot			
Massimo Ginella	Software Engineer			
Ava Carney	Marketing Lead			
James Truong	Mechnaical Engineer			
Al Cornblatt	Mechanical Engineer			
Aidan Cinque	Mechanical Engineer			
Orion Ellefson	Software Engineer			
Theo Paris	Software Engineer			

## Mentors

Mike Matera, Darren Churchill, John Greene



Required Personal Protective Equipment (PPE)						
Protect	Hazards	PPE				
Eyes	Chemical or metal splash, dust, projectiles, gas and vapor	Safety glasses, goggles, face shields, or visors				
Head	Impact from falling or flying objects, risk of head bumping, hair entanglement	Hard hats and hair ties (as needed)				
Respiratory	Dust, vapor, fumes	Disposable filtering face mask				
Body	Chemical or metal splash, abrasion, cuts and punctures, impact, penetration, contaminated dust, entanglement of clothing	Tight fitting, protective clothing with no exposed skin				
Hands and Arms	Abrasion, cuts and punctures, impact, chemicals, electric shock, skin infection, disease or contamination	Gloves				
Feet	Cuts and punctures, impact	Closed-toed, non-slip shoes				

Based on Oceaneering International HSE Employee Handbook Personal Protective Equipment (Chapter 12)

All tasks are completed under direct supervision of Cabrillo Robotics' safety officer Isaac Wax. Isaac is dedicated to ensuring all employees adhere to the job site safety protocols defined below. Presence of at least one other team member is required for ROV operation.

Task	Step	Hazards	Control	Persons Responsible
Pre Launch Inspection	Electrical Box Inspection	Electrocution	<ol> <li>Keep electronics away from water.</li> <li>Use kill switch in event of electrical malfunction.</li> <li>Advance of sealing, inspect and remedy if fluids or loose parts are discovered.</li> </ol>	Safety Officer
	Pneumatic System Inspection	Pressurized air hazard	<ol> <li>Cycle to remove water from lines.</li> <li>Check for leaks wearing PPE.</li> <li>Use kill switch if a hazard is detected.</li> </ol>	Safety Officer
	Tether Setup	Tripping	<ol> <li>Ensure tether strain relief is connected before tether is handled.</li> <li>Minimize amount of tether on deck, avoid tangles</li> <li>Notify all present of tether location.</li> <li>Do not run by the pool.</li> </ol>	Tether Manager

	PPE Check	Falling, tripping, entanglement of hair or clothing	<ol> <li>Require proper PPE</li> <li>Clear perimeter before launch.</li> <li>No running.</li> </ol>	Safety Officer
	Pool Deck Check	Falling, Tripping, Drowning	<ol> <li>Clear poolside of obstacles.</li> <li>Notify all of the tether locations.</li> </ol>	Safety Officer
	ROV Launch	Lifting Strain, Skin Abrasion	<ol> <li>Lift with knees, not back.</li> <li>Work with a team to prevent strain.</li> <li>Clear launch path.</li> <li>Check for loose electrical box connectors.</li> <li>Check O-rings</li> </ol>	Safety Officer Launch team
Launch, Operation and Retrieval	ROV Startup	Electrocution, entangling of hair or clothing, pinching or abrasion of skin.	<ol> <li>Inspect electrical box and remedy if fluids or loose parts are discovered.</li> <li>Inspect and secure all loose ROV parts.</li> <li>Check electrical connections for integrity.</li> <li>Check for loose pneumatic fittings.</li> <li>Clear perimeter around moving parts of ROV before cycling</li> <li>When the safety check is complete, state Power Up before cycling ROV.</li> </ol>	Safety Officer Launch Team
	ROV Operation	Water damage. Electrocution, entangling of hair or clothing, pinching or abrasion of skin. Falling or drowning.	<ol> <li>If water is detected in ROV, cut the power with a kill switch.</li> <li>If the electrical box overheats, follow the shut down process.</li> <li>Wear PPE.</li> <li>Do not touch the operating ROV.</li> <li>No running on the pool deck.</li> </ol>	Safety Officer Pilots
	ROV Retrieval	Electrocution, Lifting Strain, Skin Injury	<ol> <li>Turn off power before touching ROV.</li> <li>Lift from knees not back.</li> <li>Work with a team to prevent strain.</li> <li>Clear path for ROV removal.</li> </ol>	Tether Manager Launch Team