

2024-2025



**aQuatonomous**

AUTONOMOUS SURFACE VESSEL DESIGN TEAM

SPONSORSHIP PACKAGE

# Who We Are

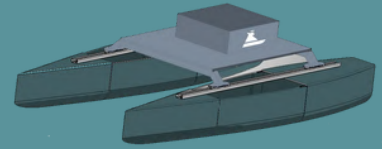
"aQuatonomous," a blend of the words "aqua," "Queen's," and "autonomous," is Smith Engineering's newest student-led interdisciplinary design team. Founded in 2023, our team has rapidly grown to over 35 passionate members, with a focus on continual expansion and innovation. Our mission centers on constructing and programming a state-of-the-art solar-powered Autonomous Surface Vessel (ASV), providing students with a unique, hands-on opportunity to engage with cutting-edge autonomous vehicle technology.

We aim to be at the forefront of AI-driven autonomy and sustainable design, integrating the expertise of our diverse sub-teams: mechanical, electrical, perception, ecological & water research, business, and core-autonomy. Our ASV project not only advances autonomous maritime technology but also catalyzes sustainability and ecological restoration efforts. Our team offers the boat to water and environmental researchers as a research vessel and measurement station.

We encourage students from all disciplines to join us, bringing their unique perspectives and skills to advance autonomous maritime technology. Through collaboration and innovation, we aim to make significant strides in ecological sustainability and autonomous vehicle design.



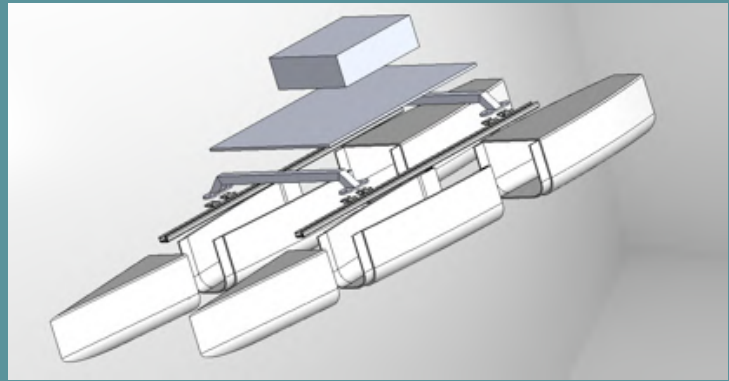
# Our Boat



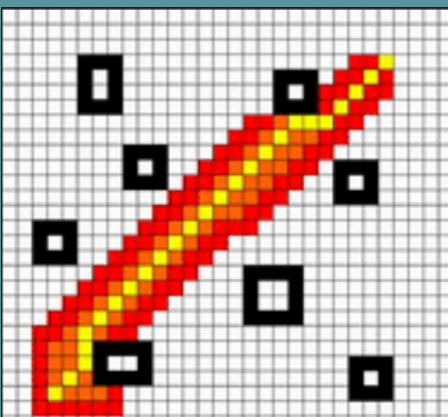
The development of our solar-powered ASV is driven by collaboration among our four core engineering sub-teams: mechanical, electrical, autonomy, and perception. The mechanical team designs and manufactures the hull, payload, electrical box, waterproof wiring, and sensor mounts, ensuring the vessel's structural integrity. The electrical team develops custom PCBs, telemetry systems, power systems, and the sensor suite, which are crucial for efficient energy management and data communication. The autonomy team simulates and tests advanced path-planning algorithms, controllers, and manual drive systems to enable autonomous navigation. The perception team creates sophisticated localization algorithms, computer vision models, and environmental maps, allowing the ASV to accurately perceive and interact with its surroundings. Together, these sub-teams push the boundaries of AI-driven autonomous maritime technology, making the innovation and functionality of aQuatonomous's ASV possible.



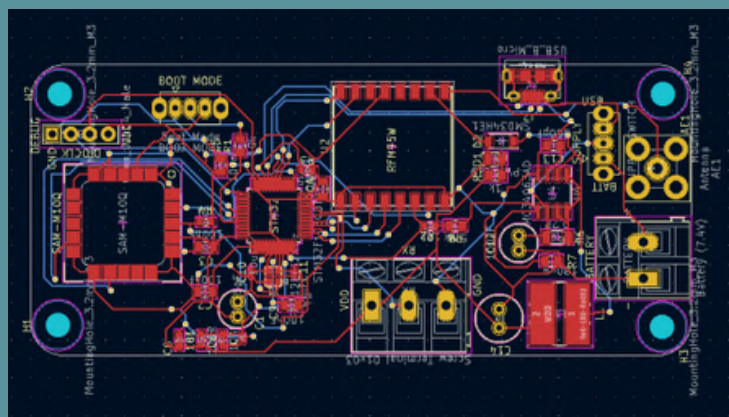
Perception



Mechanical



Autonomy



Electrical



# Competitions

In 2025, aQuatomous plans to compete in the RoboNation RoboBoat Competition and the Toronto Solar Boat Race. These events provide an excellent platform to demonstrate our innovative solar-powered ASV and to achieve our mission of generating clean-powered vessels that support ecological research and restoration. Competing on a global stage allows us to showcase our cutting-edge technology and commitment to sustainability while fostering collaboration and learning within the international community.

## RoboNation RoboBoat Competition



Where: Sarasota, Florida  
When: March 2025

**6+ Countries**

## Toronto Solar Boat Race



Where: Toronto, Ontario  
When: TBA

**30+ Teams**

# Ecological Research

In addition to competing, aQuatomous will use the ASV to advance ecological and water research. We plan to collaborate with water research labs and conduct independent studies on Lake Ontario, using our vessel's technology to support environmental monitoring and sustainability efforts. With Queen's University's close proximity to water and its numerous water research initiatives, our location provides the perfect setting for this work.



# Our Mission

## INNOVATION IN AUTONOMOUS MARINE TECHNOLOGY

We strive to be at the forefront of AI-driven autonomy and design, developing cutting-edge autonomous ASV. Our goal is to push the boundaries of technology to create more efficient and effective ASVs.

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## ECOLOGICAL AND WATER RESEARCH

We aim to advance ecological and water research by collaborating with research labs and conducting independent studies on Lake Ontario. Our ASV technology supports environmental monitoring and sustainability efforts, contributing to the understanding and preservation of aquatic ecosystems.

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## HANDS-ON LEARNING AND PROFESSIONAL DEVELOPMENT

We provide students with valuable hands-on experience in building and programming autonomous vehicles. This includes offering fieldwork opportunities to disciplines that traditionally lack such exposure, such as Mechanical, Computer, and Electrical Engineering. Through teamwork and practical application, we foster an environment where students from all disciplines can learn and grow professionally. Additionally, we are committed to recruiting first-year students, ensuring they gain early exposure to real-world projects and become integral parts of our team from the start.

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## COMMITMENT TO EDII AND PHILANTHROPY

We are dedicated to Equity, Diversity, Inclusion, and Indigeneity (EDII) principles, ensuring a diverse and inclusive team. This commitment enriches our project and community, promoting a culture of respect and collaboration. Additionally, we are committed to philanthropy, actively engaging in initiatives that give back to our community and support those in need. By fostering an inclusive environment and prioritizing philanthropic efforts, we aim to make a positive impact both within and beyond our university.





# 2024-2025 Executive Team



**Sabrina Button**  
Co-Captain



**William Palacek**  
Co-Captain



**Aaron Kleiman**  
Business Lead



**Spencer Osborn**  
Perception Lead



**Aedan Loughran**  
Mechanical Lead



**Julian Tiqui**  
Autonomy Lead



**Angus Dickson**  
Electrical Lead



**Sara Bacher**  
Ecological Science  
and Research Lead

# Why Sponsor Us

## DRIVE INNOVATION IN AUTONOMOUS TECHNOLOGY

Your sponsorship will be pivotal in advancing our state-of-the-art autonomous boat technology. With your monetary contributions, we can cover critical research expenses, acquire necessary materials, and compete at the highest levels. Your support ensures that we remain at the forefront of innovation, pushing the boundaries of what autonomous systems can achieve. Additionally, your contribution will provide students with unique opportunities in fieldwork and robotics that are not available elsewhere, fostering the next generation of pioneers in these cutting-edge fields.

## SUPPORT SUSTAINABILITY

By sponsoring aQuatomous, you are contributing to the achievement of key Sustainable Development Goals (SDGs), including SDG 6 (Clean Water and Sanitation), SDG 9 (Industry, Innovation, and Infrastructure), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), and SDG 14 (Life Below Water). Our ASV project emphasizes innovative technology for environmental monitoring and preservation. Your support fosters the next generation of engineers dedicated to sustainability. By empowering our team, you help catalyze sustainable practices in engineering, ensuring a greener future for all.

## EMPOWER OUR TEAM WITH ESSENTIAL RESOURCES

In-kind donations of equipment and expertise are crucial for our success. Contributions such as LiDAR, Sonar, radar systems, and mentorship from industry professionals empower our team to achieve more. Your support provides us with the tools and knowledge necessary to build a world-class ASV, ensuring we excel in every aspect of our mission.

## ELEVATE YOUR BRAND'S VISIBILITY AND IMPACT

Partnering with aQuatomous offers unparalleled exposure and influence for your brand. Depending on your sponsorship tier, you will receive prominent logo placements on our website and ASV, spotlight posts on social media, and opportunities to host informational and recruitment workshops. This collaboration enhances your brand's presence and demonstrates your commitment to innovation and community engagement.

## ACCESS TALENTED STUDENTS

Sponsoring aQuatomous gives you direct access to some of the brightest and most capable students at Queen's University. Our team comprises top students from diverse backgrounds and engineering disciplines. Your support not only helps these students gain valuable hands-on experience but also positions your company as a leader in nurturing future talent.



# Sponsorship Tiers

Monetary donations to aQuatomous will support competition entry and travel expenses, the purchase of sensors and materials, fabrication, and operational costs like website maintenance and outreach banners. We also accept in-kind donations of hardware, materials, and software, including items such as LiDAR, sonar, motors, batteries, carbon fibre, and foam. Please contact us for a detailed list of our current needs.

	<u>Ripple</u>	<u>Wave</u>	<u>Tidal</u>
Minimum Value of contribution to qualify	\$500	\$2000	\$5000
Logo Size on Website	S	M	L
Logo Size on ASV	S	M	L
Spotlight Post on Instagram & LinkedIn	✓	✓	✓
Team Resume Drive		✓	✓
Logo on Team Merchandise for 2024-2025			✓
Host an Informational & Recruitment Workshop			✓



**For inquiries,  
contact us.**



[aQuatomous.ca](http://aQuatomous.ca)



[aQuatomous@engsoc.queensu.ca](mailto:aQuatomous@engsoc.queensu.ca)