

AUV at USC



Autonomous Underwater Vehicle Team
University of Southern California
Viterbi School of Engineering

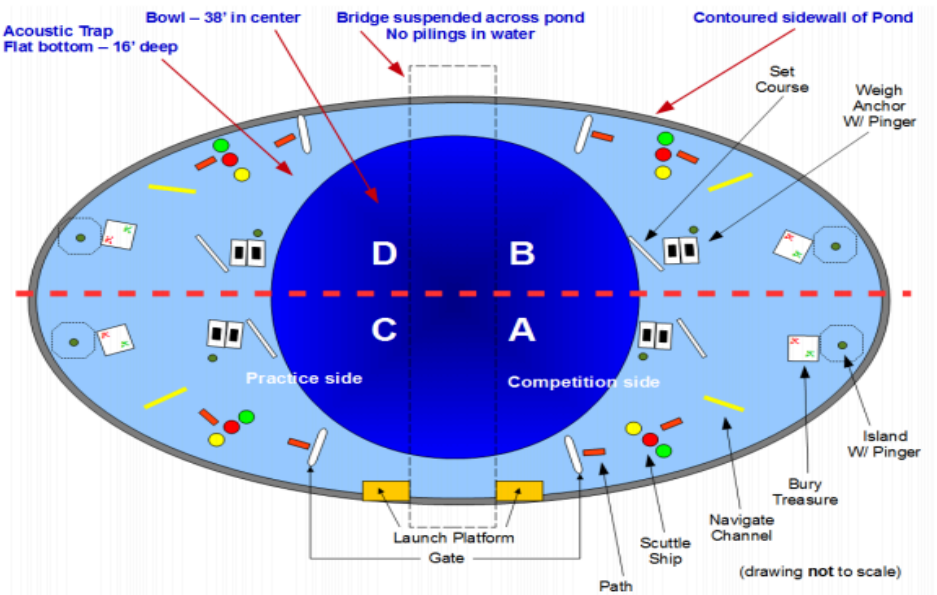
Sponsorship Packet
2024-2025

USC Viterbi
School of Engineering

About: The Competition

Every year the Association for Unmanned Vehicle Systems International (AUVSI) and the Office of Naval Research (ONR) organize the International RoboSub Competition. The competition challenges teams to design and build robotic submarines capable of navigating through and performing predefined tasks in a pool completely autonomously. The goal of this competition is to challenge students with multi-system engineering tasks and to foster relationships between engineering students and companies developing autonomous vehicle technologies. The competition enables and encourages innovation in students and professionals alike.

The teams are evaluated on both the technical performance of the submarine throughout a variety of challenges and professionalism. Competition judges score the team on the deliverables listed below. To the right is a portion of the course map from the 2016 competition, which corresponds to the performance tasks.



Professionalism

Website
Journal Paper
Craftsmanship
Team Uniform
Team Video

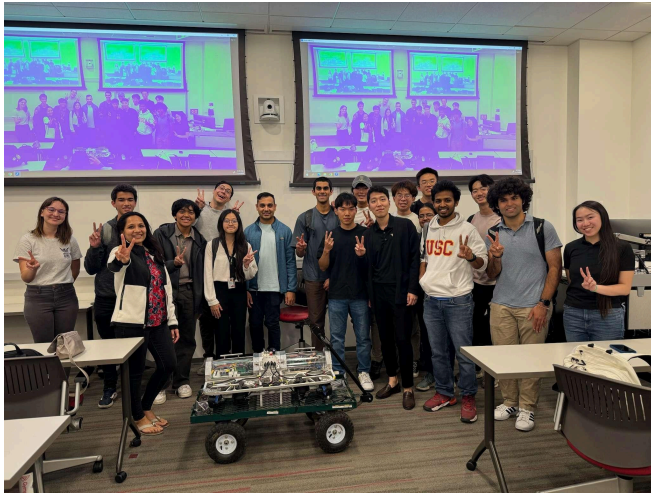
Performance

Weight
Passing through Qualifying Gate (1)
Following Competition Course (2)
Buoy Detection & Interaction (3)
Passing through Gate 2, includes "style points" (4)
Drop Markers (5)
Fire Torpedoes (6)
Locating Sonar Signal (7)
Capturing, Surfacing with, & Releasing an Object (8)
Time to Course Completion

In order to complete the above tasks and succeed at the competition, the submarine must house a variety of mechanical, electrical and software subsystems. The systems must be integrated and work in conjunction with each other to ensure full autonomous navigation through the course. As a result, our team works to rigorously design, manufacture and test all aspects of the submarine during the academic year. After validating the AUV's functionality, the team must then pitch the design to judges at the competition in a way that is both technically sound and appealing. This pitching in conjunction with the process of building an AUV with the team gives members the unique ability to gain extensive technical knowledge and skill in a highly collaborative environment. The skill sets developed to accomplish these tasks elevate students to be among the most highly pursued engineers and roboticists upon graduation.



About: Our Team



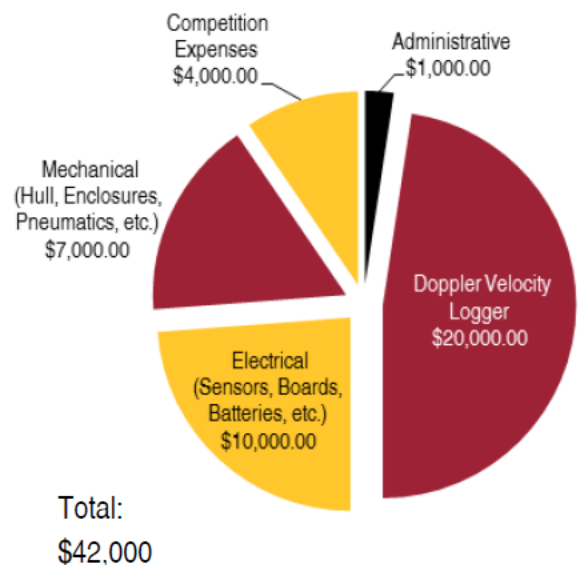
The AUV team was founded at USC in 2003, and has submitted 5+ AUVs to the competition. Since 2020, we have reached the semi-finals of Robosub twice (2022, 2023) following a redesign of the 2019 submarine. For the current academic year, our team has focused on redesigning the AUV using the lessons learned from previous competitions. Our team can be broken down into 3 main sub-teams: Mechanical, Electrical and Software. Working together, these sub-teams ensure the seamless integration of hardware and software systems, creating a robust and efficient submarine.

We have also focused on growing our membership and building a robotics community at USC. We are a diverse group of students, ranging from freshman to graduate students primarily working towards degrees in Computer Science, Electrical Engineering, and Mechanical Engineering. This year, our team has grown significantly, now boasting over 30 active members, reflecting the success of our efforts to expand and strengthen our community. In addition to this, we host bi-annual talks with leading entrepreneurs and companies in the robotics industry (see picture on left). All of these initiatives have allowed us to continue to realize our goals as USC's premier robotics design team.

We Need Your Support!

To finance its operations, USC AUV relies upon heavily on industry partners for support. This support helps the team maintain the resources necessary to provide an excellent educational experience for its members and provides the team with the opportunity to grow and improve. A projected budget for the year is presented to the right:

The USC AUV team cultivates leadership, teamwork, responsibility, and technical skills in a group of engineers that will be responsible for the future technologies of the world, especially in the realm of robotics, submersibles, and autonomous systems. Sponsoring the intellectual development of these dedicated students would be an investment in the abilities of a group of tomorrow's greatest engineers.



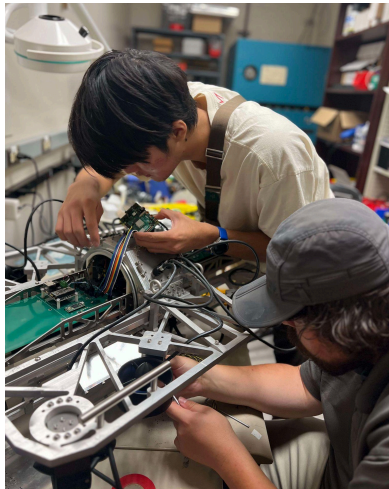
Levels of Sponsorship

Trojan (\$5001 and above)

- Invitation to tour our workspace and speaker opportunities
- Open invitation to weekly meetings
- Company logo on all pages of the website
- Company logo sticker on submarine
- All “Gold” level sponsorship benefits

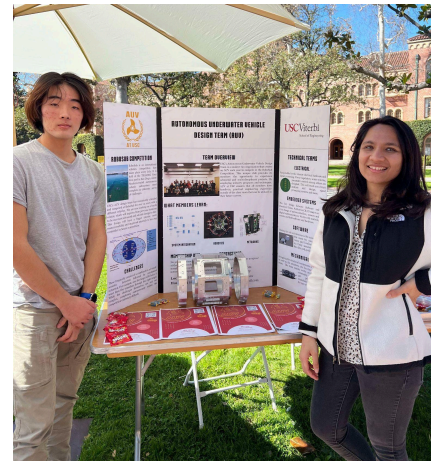
Gold (\$1001-\$5000)

- Access to members’ resume book
- Invitation to semi-annual design reviews
- All “Cardinal” level sponsorship benefits



Cardinal (up to \$1000)

- Company logo on the sponsorship page of the website, as well as posts on Instagram
- Company logo included on team apparel



Thank You

USC AUV thanks you for your consideration. We hope this marks the beginning of a new partnership between our team and your company! Your support allows us to continue operating as a serious Robosub competitor and improve year after year. If you have any questions, please feel free to contact us at evasudev@usc.edu.

Link to donate: <https://viterbi.usc.edu/auvfund>