



University of Michigan Electric Boat

2021-2022 Sponsorship Packet



WHAT WE ARE



The University of Michigan Electric Boat (UMEB) team is a student-led project team founded in 2019 at the University of Michigan. Each year, UMEB will design, build, and race a manned electric boat to compete in the Promoting Electronic Propulsion (PEP) competition hosted by the American Society of Naval Engineers.

Our members come from all walks of life, but we all share one important commonality: We strive to challenge ourselves to implement sustainable technologies to educate the next generation of engineers.



UMEB VALUES



Sustainability

We are committed to sustainability. Our vessel will be charged with solar energy, decreasing our reliance on fossil fuels.



Innovation

No idea is a bad idea. Our project gives members the opportunity to apply their theoretical skills to a real-world project with room to experiment.



Adaptability

We're no strangers to setbacks; we were founded during the COVID-19 pandemic. Our adaptability allows us to strive for greatness no matter the circumstances.



Collaboration

Diversity is vital to our team, and we recognize the value that it brings. Our members thrive in the pursuit of over 10 different majors across an array of different departments.

OUR COMPETITION

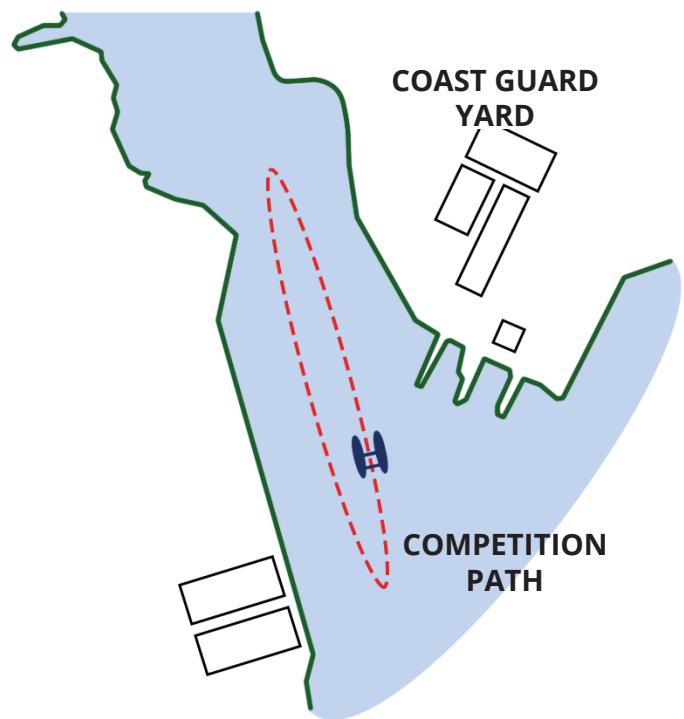


PROMOTING ELECTRIC PROPULSION (PEP) FOR SMALL CRAFT



In May of 2022, UMEB will compete in a 5-mile race with our electric boat in Baltimore, MD. This competition gives students an opportunity to work with design software, a variety of tools, and collaborate to create an innovative final product.

UMEB and our competitors are tasked with completing 5 laps in a short out and back circuit in the waters of Curtis Creek and Arundel Cove. The top three winners will be awarded \$3,000, \$2,000, and \$1,000 at the conclusion of the competition.



2021 Competition - Racing with University of Kentucky



ACHIEVEMENTS



2nd Place Finish at 2021 PEP Competition



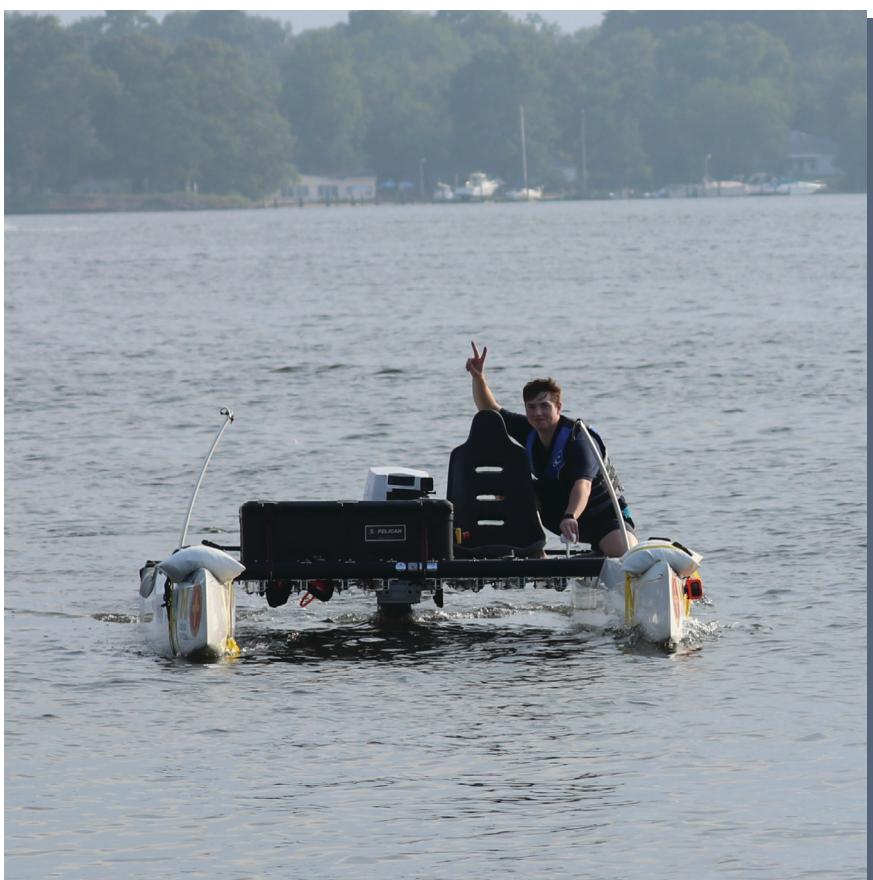
12 MPH

sustained over

4 MILES

In July of 2021, UMEB competed in the PEP competition under the name of Michigan Solar Sea. Our team finished second, winning a \$2000 cash prize.

We plan to greatly improve our speeds for the 2022 event to hold onto our podium position as the competition heats up. Your support will help us achieve this goal!



OUR SUBTEAMS



MECHANICAL SUBTEAM

Designs hull and hydrofoil structures alongside electrical system integration

- Hydrofoils - Designs and manufactures hydrofoils to reduce drag and maximize lift
 - Motor - Integrates motor and drivetrain system to maximize power output
 - Propeller - Researches and designs potential propellers for efficient propulsion
 - Hull - Models and ensures stability of hull structure while incorporating hydrofoils
-



ELECTRICAL SUBTEAM

Researches and builds our motor and safety systems with key software controls, and implements our solar array

- Sensors - Researches sensor and control hardware for assisted flight control
 - Motor - Integrates control surfaces and propulsion motors with controller systems
 - Battery - Implements battery and charging systems to supply power to motors and other systems
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BUSINESS SUBTEAM

Manages project team finances and facilitates public relations through social media marketing and website development

- Social Media - Manages social media accounts: Twitter, Facebook, Instagram, and YouTube
- Graphic Design - Designs logos, outreach materials, videos, and captures photos
- Finance - Tracks team spending and forecasts the UMEB budget
- Web Design - Designs and maintains the UMEB official website



Top View
Left Hull

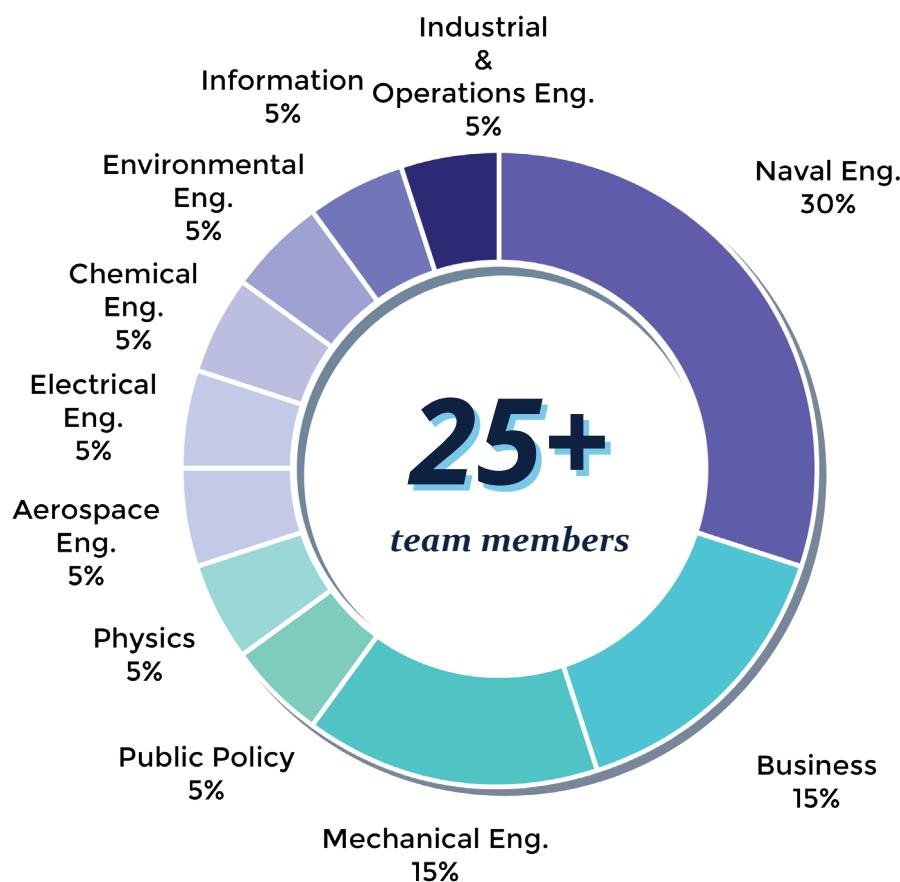
WHO WE ARE



DEI INITIATIVE

Diversity is paramount to UMEB's success. We are building the next generation of leaders in the field of engineering. Everyone is welcome on our team. Regardless of a student's background, or area of expertise, there is a place for them at UMEB.

TEAM DEMOGRAPHICS



65%

pursuing a minor

58%

pursuing graduate study

5

different schools

2021 RACE CREW



OFFICERS



Deven Parmar

Captain

devenp@umich.edu

Aerospace Engineering

Sean Hickey

Chief Engineer

hicsea@umich.edu

Naval Arch. & Marine Engineering



Jimmy Chen

Electrical Director

chenjim@umich.edu

Electrical/Mechanical Engineering

Ethan Almquist

Mechanical Director

etquist@umich.edu

Naval Arch. & Marine Engineering

Mitchell Davidson

Business Director

mitdavid@umich.edu

Business Administration



2021-2022 GOALS



We grow as a team by providing our members with tangible goals to obtain over the course of each academic year.



MECHANICAL SUBTEAM

- Design and build a passively stable hydrofoil system to operate above 35 knots
 - Implement emergency brake flaps and other systems to increase pilot safety
 - Integrate a compact twin-motor propulsion system into the base of the hydrofoils
 - Begin designing and preparing to fabricate a new composite hull for the 2023 competition
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ADMINISTRATION

- Implement our DEI initiative and maintain a welcoming atmosphere
- Recruit new members and train UMEB's future talent
- Foster a cooperative environment to enhance the learning experience
- Implement a new leadership structure with flexible project leads

ELECTRICAL SUBTEAM

- Build twin-motor propulsion system to increase speed and maneuverability of the boat
 - Implement improved vehicle controls for propulsion, hydrofoils, and steering
 - Recruit new members and expand the Electrical subteam
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BUSINESS SUBTEAM

- Raise \$50,000 to ensure that the Mechanical & Electrical subteams have enough resources to pursue their hydrofoil and twin-motor concepts
- Increase brand awareness for our new team name, University of Michigan Electric Boat, establishing ourselves as innovative, sustainable project team at UM
- Recruit young business team members to show them UMEB operations and prepare them to take over leadership

HOW TO HELP



PROJECT FUNDING

Monetary donations will be used to fund boat research and development, essential tools, parts, programs, and travel to the PEP competition in Baltimore, MD.

MATERIAL DONATIONS

Any in-kind donations that you can provide to help our cause would be extraordinarily helpful in achieving our goals.

SPONSOR US

Email:
electricboat@umich.edu
 to start the sponsorship process

BENEFITS

Sunlight Zone (\$5000+)

- Company logo on boat and T-shirt
 - » 1st tier position
- Co-hosted recruiting event on campus
- Company logo in promotional videos
- Invitation to testing events
- All Twilight Zone benefits
- All Midnight Zone benefits

Twilight Zone (\$2500-\$4999)

- Company logo on website
 - » Includes description and hyperlink
- Company logo on boat and T-shirt
 - » 2nd tier position
- All Midnight Zone benefits

Midnight Zone (\$1000-\$2499)

- Company logo on website
 - » Includes hyperlink
- Access to team resume book
- All Hadal Zone benefits

Hadal Zone (\$100-\$999)

- Company logo on website
- Social media promotion
- Tax benefits

CURRENT SPONSORS



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PALM Industries

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UNIVERSITY OF MICHIGAN



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Thank you for considering donating to UMEB. Without generous sponsors, such as yourself, we would not be able to expand our knowledge through our innovative projects.

Our team would be more than happy to meet with you to answer any questions you may have, meet some of our members, or learn about our current projects! We would love to hear your thoughts!

Again, thank you for your time.

Deven Parmar
Captain